Supreme Court, U.S.
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No. 06-

IN THE

Supreme Court of the United States

CHEMTURA CANADA CO./CIE
(formerly known as CROMPTON CO./CIE,
formerly known as UNIROYAL CHEMICAL LIMITED),

Petitioner,

v.

UNITED STATES OF AMERICA and
HERCULES INCORPORATED,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE EIGHTH CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED FOR REVIEW

1. Whether the Eighth Circuit erred in holding – contrary to the Second, Third, Fifth, Seventh, Ninth, Tenth, and Eleventh Circuits – that an entity that exercised no control over the disposal or treatment of hazardous substances, and had neither the authority nor the opportunity to control the disposal or treatment of hazardous substances, may nevertheless be held liable as one that "arranged for" the disposal or treatment of hazardous substances under § 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 *et seq.*

2. Whether retroactive application of § 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 *et seq.*, to impose unforeseeable joint-and-several liability for over $110 million based on lawful, non-negligent conduct involving only about $1.5 million in transactions violates the Fifth Amendment to the United States Constitution.

CORPORATE DISCLOSURE STATEMENT

Chemtura Canada Co./Cie, formerly known as Crompton Co./Cie, formerly known as Uniroyal Chemical Limited, is wholly owned by Crompton European Holdings B.V., a Dutch company, and is indirectly wholly owned by Chemtura Corporation, whose stock is publicly traded on the New York Stock Exchange.

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Chemtura Canada Co./Cie, formerly known as Crompton Co./Cie, formerly known as Uniroyal Chemical Limited ("Uniroyal"), petitions this Court for a writ of certiorari to the United States Court of Appeals for the Eighth Circuit.

OPINIONS BELOW

The relevant opinions of the Court of Appeals are published at *United States v. Hercules, Inc.*, 247 F.3d 706 (8th Cir. 2001) (Appendix C), and *United States v. Vertac Chemical Corporation*, 453 F.3d 1031 (8th Cir. 2006) (Appendix A). The relevant opinions of the United States District Court for the Eastern District of Arkansas are published at *United States v. Vertac Chemical Corporation*, 966 F. Supp. 1491 (E.D. Ark. 1997) (Appendix E), *United States v. Vertac Chemical Corporation*, 33 F. Supp.2d 769 (E.D. Ark. 1998) (Appendix D), and *United States v. Vertac Chemical Corporation*, 364 F. Supp.2d 941 (E.D. Ark. 2005) (Appendix B).

JURISDICTION

The Court of Appeals filed its opinion on July 13, 2006. The Court of Appeals denied a timely petition for rehearing and rehearing *en banc* on September 19, 2006. This Court has jurisdiction under 28 U.S.C. § 1254.

STATUTORY AND CONSTITUTIONAL PROVISIONS INVOLVED

Section 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act provides, in pertinent part:

> Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in

> subsection (b) of this section— ... (3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by another party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances ... shall be liable....

42 U.S.C. § 9607(a).

The Fifth Amendment to the United States Constitution provides, in pertinent part: "No person shall be ... deprived of ... property, without due process of law; nor shall private property be taken for public use, without just compensation."

STATEMENT OF THE CASE

This petition arises from actions brought by the United States, the State of Arkansas, and Hercules Incorporated ("Hercules") against Uniroyal, culminating in a judgment of joint-and-several liability for over $110 million under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601 *et seq.* The District Court originally had subject-matter jurisdiction under 28 U.S.C. §§ 1331 and 1335, 42 U.S.C. § 6973, and 33 U.S.C. § 1345. The District Court had subject-matter jurisdiction over claims later added under 42 U.S.C. §§ 9607 and 9613. The Court of Appeals had jurisdiction over the relevant appeals under 28 U.S.C. § 1291.

The United States initially developed the Vertac Chemical Corporation ("Vertac") site in Jacksonville, Arkansas, as a munitions factory in the 1930s. The site was sold in the 1940s

to Reasor-Hill Corporation ("Reasor-Hill"), now a defunct company. Reasor-Hill began manufacturing phenoxy herbicides, including trichlorophenoxyacetic acid ("2,4,5-T"), at the site in 1958. In 1961, Hercules bought the site, and, in 1974, Hercules leased the site to Transvaal, Inc., the predecessor to Vertac. Vertac bought the site from Hercules in 1976. Hercules produced 2,4,5-T at the site from 1961 until 1970. Vertac produced 2,4,5-T at the site from 1971 until 1979. Site operators produced the other principal product manufactured at the site, dichlorophenoxyacetic acid ("2,4-D"), from 1958 until 1986. *See United States v. Vertac Chem. Corp.*, 453 F.3d 1031, 1036-38 (8th Cir. 2006).

In 1980, the United States Environmental Protection Agency sued Vertac and Hercules for an injunction against the discharge of hazardous waste at the site. *United States v. Hercules, Inc.*, 247 F.3d 706, 713 (8th Cir.), *cert. denied*, 534 U.S. 1065 (2001). "The Arkansas Department of Pollution Control and Ecology sought similar relief under state law." *Id.* "Several years later, the [District Court] approved consent decrees representing a negotiated remedial plan to address the containment and monitoring of waste." *Id.* (citing *United States v. Vertac Chem. Corp.*, 588 F. Supp. 1294, 1296-97 (E.D. Ark. 1984)). "The lawsuit was later converted into" an action under CERCLA. *Id.*

> Although Vertac stipulated that it was an owner and operator of the site liable to the government for response costs under CERCLA, it ultimately failed to comply with the consent decrees and eventually sold its assets to third parties, forcing the [District Court] in 1987 to appoint a receiver to handle the company's affairs.

Id. (citing *United States v. Vertac Chem. Corp.*, 671 F. Supp. 595, 623-24 (E.D. Ark. 1987), *vacated*, 855 F.2d 856 (8th Cir.

1988) (table); *United States v. Vertac Chem. Corp.*, 756 F. Supp. 1215 (E.D. Ark. 1991), *aff'd*, 961 F.2d 786 (8th Cir. 1992)). "In an effort to identify all those potentially liable for environmental harm at the site, numerous additional parties, including the United States Department of Defense, were brought into the suit." *Id.* "These parties filed various cross-claims, counterclaims, and third party complaints; many of the parties settled [for a few million dollars] and entered into consent decrees." *Id.* at 713-14.

The Court of Appeals summarized the pertinent facts as to Uniroyal:

> Uniroyal was one of Vertac's customers and purchased 2,4,5-T and other products from Vertac in the 1970s. In 1978, Vertac informed Uniroyal that it lacked the funds to purchase enough 1,2,4,5-tetrachlorobenzene (TCB), a key ingredient in the manufacture of 2,4,5-T, to fulfill its contractual obligations to Uniroyal. Uniroyal agreed to supply Vertac with enough TCB to create some 1.3 million pounds of 2,4,5-T that was to be shipped back to Uniroyal. Vertac did not purchase the TCB directly from Uniroyal, but instead reduced the amount it charged Uniroyal for the 2,4,5-T to reflect the value of the TCB that Uniroyal had supplied. This arrangement was embodied in two separate contracts and was carried out between March 1978 and March 1979. The 2,4,5-T that was produced with Uniroyal's TCB represents less than one percent of the more than 150 million pounds of 2,4-D and 2,4,5-T that were manufactured at the site over the course of its operation.

Vertac, 453 F.3d at 1038. The District Court found that Uniroyal owned the TCB throughout the manufacturing process. The

Court of Appeals upheld that finding as not "clearly erroneous." *Hercules*, 247 F.3d at 721.

Notwithstanding the issue of ownership, the parties stipulated in the District Court that Uniroyal exercised no control over Vertac's manufacture of 2,4,5-T or over the operation of the site. The District Court found that "Uniroyal was in no position to manage the disposal of any hazardous materials." *United States v. Vertac Chem. Corp.*, 79 F. Supp.2d 1034, 1040 (E.D. Ark. 1999), *vacated on other grounds*, 247 F.3d 706 (8th Cir.), *cert. denied*, 534 U.S. 1065 (2001). No one ever challenged that factual finding on appeal. Former employees and officers of Vertac testified that Uniroyal had no authority to control Vertac's operations. That Uniroyal did not have the authority or opportunity to control the disposal or treatment of hazardous substances at the Vertac site was implicit in the decisions of the District Court and the Court of Appeals. *See United States v. Vertac Chem. Corp.*, 966 F. Supp. 1491 (E.D. Ark. 1997), *aff'd in part and rev'd in part*, 247 F.3d 706 (8th Cir.), *cert. denied*, 534 U.S. 1065 (2001).

Although Uniroyal never had the opportunity to control any aspect of Vertac's disposal or treatment of any hazardous substances, the District Court found Uniroyal liable as an entity that "arranged for" the disposal or treatment of hazardous substances under CERCLA § 107(a)(3), holding that "actual control [is] not necessary for arranger liability." *Vertac*, 966 F. Supp. at 1501. Uniroyal challenged that decision on appeal, but the Court of Appeals affirmed. *Hercules*, 247 F.3d at 720; *Vertac*, 453 F.3d at 1047.

Uniroyal also argued that retroactive application of CERCLA on the facts of this case violated the Due Process

and Takings Clauses of the Fifth Amendment to the United States Constitution because Uniroyal's liability was unforeseeable and substantially disproportionate to Uniroyal's conduct. The Court of Appeals initially recognized that inquiry into the constitutionality of CERCLA in this case would be "essentially ad hoc and fact intensive." *Hercules*, 247 F.3d at 722 (citing *Eastern Enterprises v. Apfel*, 524 U.S. 498, 523 (1998) (plurality opinion)). However, the Court of Appeals ultimately rejected Uniroyal's as-applied constitutional challenge without any analysis of the facts of the case. *Vertac*, 453 F.3d at 1047-48.

Uniroyal first asks this Court to resolve a split among the Courts of Appeals concerning the standard for imposing "arranger liability" under CERCLA. Here, the Eighth Circuit – contrary to the Second, Third, Fifth, Seventh, Ninth, Tenth, and Eleventh Circuits – held an entity that exercised no control over the disposal or treatment of hazardous substances, and possessed neither the authority nor the opportunity to control the disposal or treatment of hazardous substances, liable as one that "arranged for" the disposal or treatment of hazardous substances. This petition thus raises an important issue that was decided by the Court of Appeals in a manner that conflicts with the decisions of other Courts of Appeals. This Court should resolve that conflict. Sup. Ct. R. 10(a).

Uniroyal next asks this Court to decide whether retroactive application of CERCLA to impose unforeseeable, staggering joint-and-several liability that is disproportionate to the actor's lawful, non-negligent conduct violates the Fifth Amendment to the United States Constitution. The transactions at issue between Uniroyal and Vertac involved approximately $1.5 million, yet the Court of Appeals'

decision could result in the imposition of liability on Uniroyal for over $110 million in response costs. This petition raises an important federal question that was decided by the Court of Appeals in conflict with the decisions of this Court. This Court should address that question. Sup. Ct. R. 10(c).

REASONS FOR GRANTING THE PETITION

I. The Eighth Circuit's Interpretation Of CERCLA Arranger Liability Conflicts With The Statutory Language And The Decisions Of Other Courts of Appeals.

Section 107(a)(3) of CERCLA imposes liability on "any person who by contract, agreement, or otherwise arranged for disposal or treatment ... of hazardous substances ... owned or possessed by such person. ..." 42 U.S.C. § 9607(a)(3). For arranger liability to attach, a person must both "own[] or possess[]" hazardous substances and "arrange[] for" their disposal or treatment. *Id.* "CERCLA does not define the phrase 'arranged for.'" *South Florida Water Mgmt. Dist. v. Montalvo*, 84 F.3d 402, 406 (11th Cir. 1996) (internal citations omitted); *see also United States v. Cello-Foil Prods., Inc.*, 100 F.3d 1227, 1231 (6th Cir. 1996) (same); *Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746, 751 (7th Cir. 1993) (same), *cert. denied*, 510 U.S. 1044 (1994). CERCLA's legislative history provides little guidance in determining the meaning of these words. *Montalvo*, 84 F.3d at 406 n. 6; *United States v. Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 1380 n. 8 (8th Cir. 1989). "Congress has left this task to the courts, and the courts have at times struggled with the contours of 'arranger liability' under § 107(a)(3)." *Montalvo*, 84 F.3d at 406.

The parties stipulated that Uniroyal exercised no control over the manufacture of 2,4,5-T or over the operation of the Vertac site. The District Court found that "Uniroyal was in no position to manage the disposal of any hazardous materials." *Vertac*, 79 F. Supp.2d at 1040. Nonetheless, both the District Court and the Court of Appeals held Uniroyal liable as an arranger, reasoning that Uniroyal owned the TCB throughout Vertac's manufacturing process and that control is not "necessary" to expose a person to arranger liability. *Vertac*, 966 F. Supp. at 1501; *Hercules*, 247 F.3d at 720. The holding that control is unnecessary conflicts with the plain language of § 107(a)(3), which requires that a person both "owned or possessed" the hazardous substances and "arranged for" their disposal or treatment. *See Morton Intern., Inc. v. A.E. Staley Mfg. Co.*, 343 F.3d 669, 676-77 (3d Cir. 2003). The Court of Appeals read the words *arranged for* out of § 107(a)(3) and rendered this central language of the statute superfluous.

The Courts of Appeals have adopted differing standards for the imposition of CERCLA arranger liability. The Third Circuit recognized:

> Almost all of our sister circuit courts have adopted a standard for "arranger liability," but the standards adopted vary. *See Geraghty and Miller, Inc. v. Conoco Inc.*, 234 F.3d 917, 929 (5th Cir. 2001), *cert. denied*, 533 U.S. 950, 121 S.Ct. 2592, 150 L.Ed.2d 751 (2001); *Freeman v. Glaxo Wellcome, Inc.*, 189 F.3d 160, 164 (2d Cir. 1999); *Pneumo Abex Corp. v. High Point, Thomasville and Denton R.R. Co.*, 142 F.3d 769, 775 (4th Cir. 1998); *United States v. Cello-Foil Products, Inc.*, 100 F.3d 1227, 1231-32 (6th Cir. 1996); *South*

> *Florida Water Management District v. Montalvo*, 84 F.3d 402, 407 (11th Cir. 1996); *Amcast Industrial Corporation v. Detrex Corp.*, 2 F.3d 746, 751 (7th Cir. 1993); *Jones-Hamilton Co. v. Beazer Materials & Servs., Inc.*, 973 F.2d 688, 695 (9th Cir. 1992); *United States v. Aceto Agricultural Chems. Corp.*, 872 F.2d 1373, 1381-82 (8th Cir. 1989).

Morton, 343 F.3d at 676-77.

Even before the decisions below, the Eighth Circuit had advanced the most liberal interpretation of the words *arranged for*. *See Mathews v. Dow Chem. Co.*, 947 F. Supp. 1517, 1523 (D. Colo. 1996) (citing *Aceto*, 872 F.2d at 1378-82). In *Aceto*, the Court of Appeals emphasized that, because of an allegation of ownership, it was reasonable to infer from the complaint that the defendants had the authority to control the waste-disposal practices at issue. 872 F.2d at 1383. However, in the case at bar, the Court of Appeals discounted the importance of that conclusion. Despite the fact that, in *Aceto*, there was no meaningful difference between the CERCLA claim and the claim under the Resource Conservation and Recovery Act, 42 U.S.C. § 6973 *et seq.* ("RCRA"), the Court of Appeals below reasoned:

> Although we stated in *Aceto* that "it may be reasonably inferred that [defendants] had the authority to control the way in which the pesticides were formulated," . . . this observation came as part of our discussion of RCRA and was not necessary to our prior conclusion that the complaint stated a valid claim under CERCLA. Indeed, in the portion of *Aceto* that discussed

> CERCLA, we specifically rejected the defendants' contention that control is required in every circumstance. To support their argument, the defendants in *Aceto* quoted *NEPACCO*, 810 F.2d at 743, for the proposition that they should "escape liability because they had no authority to control" the formulation and disposal process. . . . We distinguished *NEPACCO* by observing that a finding of control had been necessary in that case only because ownership was lacking. . . . The *Aceto* defendants, however, unlike those in *NEPACCO*, "actually owned the hazardous substances, as well as the work in process," . . . and thus an arguable absence of control did not mandate dismissal of the complaint. Control, therefore, is not a necessary factor in every case of arranger liability. . . .

Hercules, 247 F.3d at 720 (internal citations omitted).

Holding that the imposition of arranger liability does not require a finding of control, the Court of Appeals departed from its earlier interpretation of CERCLA arranger liability. The Court of Appeals had unequivocally stated, "We agree . . . that, in the wake of [*United States v. Gurley*, 43 F.3d 1188 (8th Cir.1994),] and [*United States v. Vertac Chemical Corporation*, 46 F.3d 803 (8th Cir. 1995)], a finding of arranger liability requires some level of actual participation in, or exercise of control over, activities that are causally connected to, or have some nexus with the arrangement for disposal of hazardous substances or the off-site disposal itself." *United States v. TIC Inv. Corp.*, 68 F.3d 1082, 1087-88 (8th Cir. 1995). Indeed, in an earlier appeal in this very case, the Court of Appeals held that the United States

Department of Defense was not liable for any response costs because it did not control the disposal of hazardous substances. *Vertac*, 46 F.3d at 809. The Court of Appeals' current standard for arranger liability, as articulated below, reaches much further than these earlier cases.

Numerous Courts of Appeals have rejected the Eighth Circuit's approach. At the other end of the spectrum, the United States Court of Appeals for the Second Circuit held:

> Congress employed traditional notions of duty and obligation in deciding which entities would be liable under CERCLA as arrangers for the disposal of hazardous substances. Accordingly, this court concludes that it is the *obligation* to exercise control over hazardous waste disposal, and not the mere ability or opportunity to control the disposal of hazardous substances that makes an entity an arranger under CERCLA's liability provision.

General Elec. Co. v. AAMCO Transmissions, Inc., 962 F.2d 281, 286 (2d Cir. 1992) (emphasis in original). The Second Circuit observed that "courts have found that ownership of hazardous substance, when combined with actual control over the process that generates the hazardous waste, supports arranger liability." *Id.* at 287. In the Second Circuit, even "the opportunity or ability to control a third-party's waste disposal practices" does not suffice to hold a person "liable as an entity that 'otherwise arranged for' disposal or transport of hazardous waste." *Id.* at 286. The United States Court of Appeals for the Fifth Circuit cited the Second Circuit's opinion with approval. *See Geraghty and Miller, Inc. v. Conoco, Inc.*, 234 F.3d 917, 929 (5th Cir. 2000), *cert. denied*, 533 U.S. 950 (2001).

Likewise, the United States Court of Appeals for the Third Circuit has explained, "Ownership or possession of the hazardous substance must be demonstrated, but this factor alone will not suffice to establish liability. A plaintiff must also demonstrate either control over the process that results in a release of hazardous waste or knowledge that such a release will occur during the process." *Morton*, 343 F.3d at 677-78.

Using the Eighth Circuit's earlier cases, the United States Court of Appeals for the Ninth Circuit expressed its view as follows:

> To summarize our view of *Aceto* and *NEPACCO*, and to assess the interrelationship of the factors of ownership, possession, and control over waste disposal, we can do no better than to quote from Judge Levi's careful opinion in *United States v. Iron Mountain Mines, Inc.*, 881 F.Supp. 1432 (E.D. Cal. 1995). He writes:
>
> > It is true that some cases impose arranger liability on parties who did not literally own or physically possess hazardous waste at the time it was disposed of or released. But in each of these cases the party either was the source of the pollution or managed its disposal by the arranger [citing numerous cases, including *Aceto* and *NEPACCO*].
> >
> > No court has imposed arranger liability on a party who never owned or possessed, and never had any authority to control or duty to dispose of, the hazardous materials at issue.

> *See, e.g., General Elec. Co. v. AAMCO Transmissions, Inc.*, 962 F.2d 281, 286 (2d Cir. 1992) ("it is the obligation to exercise control over hazardous waste disposal, and not the mere ability or opportunity to control the disposal of hazardous substances that makes an entity an arranger under CERCLA's liability provision") (emphasis in original).

United States v. Shell Oil Co., 294 F.3d 1045, 1058-59 (9th Cir. 2002).

The United States Court of Appeals for the Eleventh Circuit interpreted the Eighth Circuit's decision in *Aceto* as Uniroyal did. The Eleventh Circuit rejected the plaintiffs' reliance on *Aceto* in *South Florida Water Management District v. Montalvo*, 84 F.3d 402 (11th Cir. 1996). The *Montalvo* panel noted that, in *Aceto*, the Eighth Circuit had concluded that "it was possible to infer the manufacturers exercised some control over the formulator's mixing process." *Id.* at 408. The Eleventh Circuit found that the *Montalvo* plaintiffs had not alleged that the defendants "had sufficient knowledge of or control over plaintiffs' disposal practices to be held liable" as "arrangers" for the disposal of hazardous substances. *Id.* at 409. And the United States Court of Appeals for the Eleventh Circuit has ruled,

> If Congress wishes to impose liability on parties who contract for services that produce hazardous waste, it, not us, has the authority to do so. We emphasize, however, that our opinion does not foreclose the possibility that a party could so control and benefit from another company's

> production of hazardous waste that arranger liability would arise under 42 U.S.C. § 9607(a)(3).

Concrete Sales and Servs., Inc. v. Blue Bird Body Co., 211 F.3d 1333, 1339 (11th Cir. 2000). *See Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746, 751 (7th Cir. 1993) ("The words ['arranged for'] imply intentional action. The only thing that Detrex arranged for Transport Services to do was to deliver TCE to Elkhart's storage tanks. It did not arrange for spilling the stuff on the ground."), *cert. denied*, 510 U.S. 1044 (1994).

The United States Court of Appeals for the Tenth Circuit applied this Court's decision in *United States v. Bestfoods*, 524 U.S. 51 (1998), which defined the standard for "operator liability" to require one to "manage, direct, or conduct operations specifically related to pollution, that is, operations having to do with the leakage or disposal of hazardous waste, or decisions about compliance with environmental regulations," to cases involving arranger liability. *Raytheon Constructors, Inc. v. Asarco, Inc.*, 368 F.3d 1214, 1217 (10th Cir. 2003).

If the United States had brought this case in the Second, Third, Fifth, Seventh, Ninth, Tenth, or Eleventh Circuit, Uniroyal likely would not have been held liable under CERCLA as one that "arranged for" the disposal or treatment of hazardous substances. At the same time, in addition to the Eighth Circuit, the United States Court of Appeals for the Sixth Circuit imposes arranger liability in the absence of a finding of control. The Sixth Circuit held that "a party can be responsible for 'arranging for' disposal, even when it has no control over the process leading to the release of substances." *United States v. Cello-Foil Prods., Inc.*, 100 F.3d 1227, 1232 (6th Cir. 1996). The appropriate inquiry,

according to the Sixth Circuit, "is whether the party intended to enter into a transaction that included an 'arrangement for' the disposal of hazardous substances." *Id.* at 1231.

The Courts of Appeals' differing standards for the imposition of CERCLA arranger liability generate confusion and inequity in the marketplace. While the Second Circuit requires an obligation to control the disposal or treatment of hazardous substances to impose arranger liability, the Eighth Circuit held Uniroyal liable as an arranger despite the absence of even the opportunity to control the disposal or treatment of hazardous substances. Liability for environmental cleanup costs is often staggering: Here, the judgment potentially exposes Uniroyal to liability for over $110 million. This Court should resolve the split among the Circuit Courts of Appeals and provide a uniform standard for the imposition of CERCLA arranger liability.

II. The Court of Appeals' Opinion Imposes Unforeseeable Joint-And-Several Liability For Over $110 Million Based On Lawful, Non-Negligent Conduct Involving Only About $1.5 Million In Transactions In Violation Of The Fifth Amendment To The United States Constitution.

The Court of Appeals rejected Uniroyal's as-applied challenge to CERCLA's constitutionality on the ground that it had previously rejected challenges to CERCLA's constitutionality. *Vertac*, 453 F.3d at 1047-48. The Court of Appeals ruled that the retroactive application of CERCLA is never unconstitutional, even when a retroactive application imposes severe liability on a limited class of parties that could not have anticipated the liability and the liability is substantially disproportionate to the parties' experience and settled expectations.

"[T]he presumption against retroactive legislation is deeply rooted in our jurisprudence." *Landgraf v. USI Film Prods.*, 511 U.S. 244, 265 (1994). The retroactive application of legislation that imposes unexpected, severe, and disproportionate liability violates the Fifth Amendment to the United States Constitution. *Eastern Enterprises v. Apfel*, 524 U.S. 498 (1998). "Elementary considerations of fairness dictate that individuals should have an opportunity to know what the law is and to conform their conduct accordingly; settled expectations should not be lightly disrupted." *Landgraf*, 511 U.S. at 265. The "principle that the legal effect of conduct should ordinarily be assessed under the law that existed when the conduct took place has timeless and universal appeal." *Id.* (quoting *Kaiser Aluminum & Chem. Corp. v. Bonjorno*, 494 U.S. 827, 855 (1990) (Scalia, J., concurring)). CERCLA does not expressly provide for retroactivity, and Uniroyal's activities giving rise to CERCLA liability in this case predated CERCLA and were lawful and non-negligent. Nonetheless, Uniroyal was unexpectedly held jointly and severally liable for over $110 million in CERCLA response costs.

In *Eastern Enterprises*, this Court held the Coal Industry Retiree Health Benefit Act of 1992 (the "Coal Act"), 26 U.S.C. §§ 9701-22, unconstitutional as applied to impose retroactive liability on a company to pay health benefits to over 1,000 of its former employees. Although there was no single opinion for the Court, Justice O'Connor, writing for a plurality that included Chief Justice Rehnquist, Justice Scalia, and Justice Thomas, distilled three factors of "particular significance" from prior cases: "The economic impact of the regulation, its interference with reasonable investment backed expectations, and the character of the governmental action." *Eastern Enters.*, 524 U.S. at 523; *see also Kaiser*

Aetna v. United States, 444 U.S. 164, 174-75 (1979). The plurality opined that, while several prior cases had upheld retroactive statutes, their imposition of retroactive liability was "confined to short and limited periods required by the practicalities of producing national legislation." *Eastern Enters.*, 524 U.S. at 526. The plurality concluded that the Takings Clause of the Fifth Amendment forbids the application of a statute in a particular case if the law "imposes severe retroactive liability on a limited class of parties that could not have anticipated the liability, and [if] the extent of that liability is substantially disproportionate to the parties' experience." *Id.* at 528-29.

Justice Kennedy, concurring in the judgment and dissenting in part, agreed that the Coal Act, as applied to Eastern Enterprises, was arbitrary and therefore unconstitutional. Justice Kennedy rested his decision on the Due Process Clause of the Fifth Amendment rather than on the Takings Clause. That said, Justice Kennedy stated that he was "in full accord with many of the plurality's conclusions[.]" *Id.* at 539. He agreed that "[t]he plurality's careful assessment of the history and purpose of the statute in question demonstrates the necessity to hold it arbitrary and beyond the legitimate authority of the Government to enact." *Id.*

The four dissenters likewise recognized that retroactive application of a federal statute may be unconstitutional under the Due Process Clause of the Fifth Amendment. The dissenters explained that, "like the plurality," they "would inquire if the law" as applied retroactively was "fundamentally unfair or unjust." *Id.* at 558 (Breyer, J., joined by Stevens, Souter, and Ginsburg, JJ., dissenting). "[T]he Due Process Clause can offer protection against legislation that is unfairly retroactive[,] for . . . a law that is fundamentally unfair because of its retroactivity is a law that is basically arbitrary." *Id.* at 557. The dissent noted

that the same three factors articulated by the plurality could properly be applied in the due process, rather than takings, context. *Id.* (citing *Connolly v. Pension Benefit Guar. Corp.*, 475 U.S. 211, 227 (1986)). The dissenters concluded that, on the facts before them, retroactive application of the Coal Act to Eastern Enterprises was not fundamentally unfair or unjust. But every Justice in *Eastern Enterprises* agreed with the core proposition that "an unfair retroactive assessment of liability upsets settled expectations, and ... thereby undermines a basic objective of law itself." *Id.* at 558 (Breyer, J., joined by Stevens, Souter, and Ginsburg, JJ., dissenting); *compare id.* at 532 (plurality) ("Retroactivity is generally disfavored in the law, in accordance with fundamental notions of justice that have been recognized throughout history") (internal quotation marks and citations omitted); *id.* at 547 (Kennedy, J., concurring in the judgment) ("for centuries our law has harbored a singular distrust of retroactive statutes").

Some courts, including the Court of Appeals below in one opinion, have recognized that *Eastern Enterprises* can provide a basis to challenge a retroactive application of CERCLA. *See, e.g., Hercules, Inc.*, 247 F.3d at 722 (stating that "inquiry into the constitutionality of CERCLA ... would be 'essentially ad hoc and fact intensive'") (quoting *Eastern Enterprises*); *Coeur D'Alene Tribe v. Asarco Inc.*, 280 F. Supp.2d 1094, 1111 (D. Idaho 2003) ("Defendants' argument that the retroactive application of CERCLA in this case is a taking or in violation of the due process clause of the Constitution as discussed in *Eastern Enterprises* [] is reserved until the dollar amount of the damages is established in the second phase of the trial."). Other courts have refused to apply *Eastern Enterprises* to evaluate the constitutionality of the retroactive application of CERCLA on the ground that the decision has no precedential effect. *See, e.g., United States*

v. Alcan Aluminum Corp., 315 F.3d 179, 189 (2d Cir. 2003) ("The only binding aspect of [*Eastern Enterprises*] is its specific result, and so the authority of *Eastern Enterprises* is confined to its holding that the Coal Act is unconstitutional as applied to Eastern Enterprises."); *Franklin County Conv. Facilities v. American Premier*, 240 F.3d 534, 552 (6th Cir. 2001) (holding that '*Eastern Enterprises* has no precedential effect [on the retroactive application of CERCLA] because no single rationale was agreed upon by the Court").

The judgment in this case holds Uniroyal jointly and severally liable for over $110 million in response costs as a result of lawful, non-negligent conduct involving only $1.5 million in transactions. As the District Court recognized, "Uniroyal and Hercules are left 'holding the bag' for Vertac, who at least arguably caused the greatest amount of harm." *Vertac*, 79 F. Supp.2d at 1036. Retroactive application of CERCLA can result in this sort of large-scale, unexpected liability and thereby undermine the "free, dynamic society" that is "fostered by a rule of law that gives people confidence about the legal consequences of their actions." *Landgraf*, 511 U.S. at 266. The Court of Appeals' ruling that the retroactive application of CERCLA is never susceptible to an as-applied constitutional challenge fails to address this Court's opinion in *Landgraf* and directly contradicts the views of all the Justices of this Court in *Eastern Enterprises*. This Court should decide whether the retroactive application of CERCLA can violate the Constitution and whether it does so as to Uniroyal in this case.

CONCLUSION

For all these reasons, the petition for a writ of certiorari to the United States Court of Appeals for the Eighth Circuit should be granted.

Respectfully submitted,

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APPENDIX

APPENDIX A — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT FILED JULY 13, 2006

UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

Nos. 05-3147, 05-3153.

Submitted: March 13, 2006.

Filed: July 13, 2006.

Rehearing and Rehearing En Banc Sept. 19, 2006*

UNITED STATES of America,

Plaintiff/Appellee,

Arkansas Department of Pollution Control and Ecology,

Plaintiff,

v.

VERTAC CHEMICAL CORPORATION,

Defendant,

Hercules, Inc.,

Defendant/Appellant,

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* Chief Judge Loken did not participate in the consideration or decision of this matter.

Appendix A

Inter-Ag Corporation; Department of Defense; Dow Chemical Corporation; Velsicol Chemical Corporation; John Does, 1-5; Chemtura Corporation, formerly known as Crompton Co., formerly known as CIE, formerly known as Uniroyal Chemical Limited,

Defendants,

John Doull, Ph.D., M.D.; Karl K. Rozman, Ph.D.; William J. Waddell, M.D.; K. Roger Hornbrook, Ph.D.; Daniel M. Byrd, III, Ph.D., D.A.B.T.; Robert Golden, Ph.D.; B. Frank Vincent, Ph.D.; American Council on Science and Health, Amici on behalf of Appellant.

United States of America,

Plaintiff/Appellee,

Arkansas Department of Pollution Control and Ecology,

Plaintiff,

v.

Vertac Chemical Corporation; Hercules, Inc.; Inter-Ag Corporation; Department of Defense; Dow Chemical Corporation; Velsicol Chemical Corporation; John Does, 1-5;

Defendants,

Crompton Co./CIE,

Defendant/Appellant.

Appendix A

Before WOLLMAN, FAGG, and RILEY, Circuit Judges.

WOLLMAN, Circuit Judge.

Hercules, Inc. (Hercules) and Crompton Co./Cie (Uniroyal)[1] raise constitutional claims and argue that the district court[2] erred in assigning and apportioning liability for environmental cleanup costs pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § § 9601-0675, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub.L. No. 99-499, 11 Stat. 1613. We affirm.

I. BACKGROUND

This case involves twenty-six years of litigation and numerous district court and appellate opinions, both published and unpublished. At issue is the cost the United States has incurred in its environmental cleanup efforts at the Vertac Chemical Plant site in Jacksonville, Arkansas (the Jacksonville site or the site). The full procedural and factual history of this case has been discussed in several previous decisions. This opinion will address the relevant portions of each.

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1. As of January 30, 2001, Uniroyal Chemical Limited changed its name to Crompton Co./Cie. For consistency, we will use Uniroyal throughout this opinion.

2. The Honorable George Howard, Jr., United States District Judge for the Eastern District of Arkansas.

Appendix A

A. Factual History

The Jacksonville site was originally developed by the federal government in the 1930s as a munitions factory. In the late 1940s, the site was sold to Reasor-Hill Corporation (Reasor-Hill), a now-defunct company. Reasor-Hill first manufactured various pesticides, but began manufacturing phenoxy herbicides in 1958. These herbicides included dichlorophenoxyacetic acid (2,4-D) and trichlorophenoxyacetic acid (2,4,5-T), synthetic hormones that kill weeds or brush by accelerating growth to the point of natural death. Although these herbicides biodegrade into harmless substances, the manufacture of 2,4,5-T (but not 2,4-D) creates a toxic byproduct that is now viewed as hazardous to humans, 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin). While Reasor-Hill operated the site, an unknown quantity of these and other untreated chemical wastes from the production processes flowed through cooling ponds on the west side of the plant into a nearby stream, Rocky Branch Creek. Other wastes were stored in drums stacked in a field on the site.

In 1961, Hercules bought the site and continued to manufacture herbicides, including 2,4-D and 2,4,5-T, at the plant until 1970. During this period, Hercules sold the bulk of its product to the United States Department of Defense as the defoliant Agent Orange, a herbicide made from a mixture of 2,4-D and 2,4,5-T that was used in Vietnam to clear jungle undergrowth.

Soon after Hercules took over the site, it buried the deteriorating drums left by Reasor-Hill in unlined trenches

in the southeast corner of the site. Until late 1964, Hercules continued Reasor-Hill's practice of discharging untreated waste water directly into Rocky Branch Creek. Hercules then constructed a waste water pretreatment system, but the system did not remove dioxin. It consisted of a neutralization trench designed to reduce the acidity of the water, an equalization basin designed to stabilize the rate of flow into the City of Jacksonville's sewage system, and a pump and pipe to deliver the treated water to the sewage system. The system's equalization basin frequently overflowed during heavy rainfalls, and it leaked.

After it learned of the toxicity of dioxin in 1965, Hercules instituted a toluene extraction process designed to remove organic impurities from 2,4,5-T products. This process yielded residue (stillbottoms) containing extremely high levels of dioxin. Hercules placed this residue in drums, some of which it buried at the site and some of which it disposed of at a nearby landfill. Hercules acknowledges that numerous leaks and spills occurred during its operation of the site. When the drums leaked in the process area before being transported to the drum burial pit, Hercules's practice was to place any contaminated soil into the drum.

In 1970, Hercules ceased production at the site. Hercules cleaned out all of its equipment and production vessels, buried its waste, and shipped empty drums off-site. In 1971, it leased the facility to Transvaal, Inc., which later became Vertac Chemical Corp. (Vertac).[3]

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3. Transvaal reorganized as Vertac in 1976. In this opinion, we will refer to both corporations as Vertac.

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Vertac continued to manufacture 2,4-D and 2,4,5-T and followed Hercules's practice of burying most of the waste. In 1975, however, Vertac began shipping its 2,4-D waste to off-site landfills and began to store its 2,4,5-T stillbottoms above ground with the hope that the waste would someday be recycled. In 1976, Vertac purchased the site from Hercules. Vertac voluntarily ceased manufacturing 2,4,5-T and 2,4,5-TP on March 15, 1979.

On February 26, 1980, the United States Environmental Protection Agency (EPA) issued a proposed rule under the Toxic Substances Control Act to prevent Vertac from disposing of the dioxin from the Jacksonville site. This rule, known as the Vertac Rule, became final later that year and prohibited the off-site disposal of 2,4-D wastes that contained dioxin. If Vertac could show that a batch of 2,4-D produced waste that was free of dioxins, it could dispose of that waste and all subsequent 2,4-D waste off-site.

According to testimony at the hearing on the proposed rule, Vertac had approximately 3200 drums of wastes resulting from the production of 2,4-D. The first set of samples taken from seven hundred drums of waste resulting from the initial production of 2,4-D revealed dioxin levels of approximately twenty parts per billion (ppb). The samples were later sent to Wright State University and Monsanto Company for testing. Monsanto could not detect any dioxin with its analytical equipment, but Wright State detected .7 ppb. In a second sampling of 1000 drums, it detected .5 ppb and the next sampling showed .3 ppb. Because the 2,4-D waste contained dioxin, Vertac stopped analyzing samples of the waste and allowed the drums to accumulate. Later

testing by the State of Arkansas, as well as the results of trial burns, revealed the presence of dioxin in the drums.

Vertac continued its operations until 1986. In 1987, it abandoned the site, and the site went into receivership. By then, there were nearly 29,000 drums at the site that contained waste materials including 2,4-D, 2,4,5-T, and dioxin. Some drums were labeled T waste, some D waste, some were marked T and D, and some were not marked at all. Many of these markings were indistinguishable or unreadable. More than 15,000 drums were stored outside and exposed to the elements. The drums were stacked three high on deteriorating pallets and were failing at a rate of between five to three hundred drums per week.

Many of the drums had corroded and leaked, contaminating the soil, groundwater, and buildings at the site. Contamination was found in other areas of the site, at the landfills, in nearby neighborhoods, and in the grounds adjacent to the site. After Vertac abandoned the plant, the EPA took over the site, closed down all operations, and assumed cleanup responsibilities that have cost well over $110 million to date.

To carry out its response measures, the EPA divided the site into five units: off-site areas, operable units 1, 2, and 3, and the incineration response action. Several removal actions addressed the immediate threat posed by the drummed waste left on the site when it was abandoned. Four remedial actions addressed the long term solutions for the rest of the site and the surrounding area affected by the site. For each of the remedial actions, the National Contingency Plan required the

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EPA to (1) conduct a remedial investigation of the site conditions, including an endangerment assessment of the threats posed by the contamination at the site; (2) perform a feasibility study examining the various technical alternatives for remediating the site; (3) take public comment on the EPA's proposed remedial action plan based on the alternatives discussed in the feasibility study; (4) compile an administrative record for remedial action decision making; and (5) issue a written record of decision (ROD) explaining the Regional Administrator's reasoning in selecting the final remedial action plan and responding to the public comments received.

Uniroyal was one of Vertac's customers and purchased 2,4,5-T and other products from Vertac in the 1970s. In 1978, Vertac informed Uniroyal that it lacked the funds to purchase enough 1,2,4,5-tetrachlorobenzene (TCB), a key ingredient in the manufacture of 2,4,5-T, to fulfill its contractual obligations to Uniroyal. Uniroyal agreed to supply Vertac with enough TCB to create some 1.3 million pounds of 2,4,5-T that was to be shipped back to Uniroyal. Vertac did not purchase the TCB directly from Uniroyal, but instead reduced the amount it charged Uniroyal for the 2,4,5-T to reflect the value of the TCB that Uniroyal had supplied. This arrangement was embodied in two separate contracts and was carried out between March 1978 and March 1979. The 2,4,5-T that was produced with Uniroyal's TCB represents less than one percent of the more than 150 million pounds of 2,4-D and 2,4,5-T that were manufactured at the site over the course of its operation.

Appendix A

B. Procedural History[4]

On October 12, 1993, the district court granted the government's motion for summary judgment, holding that Hercules was jointly and severally liable under CERCLA sections 107(a)(2) and (3) for the response costs incurred by the United States with regard to the Jacksonville site. 42 U.S.C. § 9607(a)(2) and (3); *United States v. Vertac Chem. Corp.*, 841 F.Supp. 884 (E.D.Ark.1993). Hercules moved for reconsideration, arguing that disputed issues of fact existed regarding divisibility. On November 1, 1993, the district court denied Hercules's motion, finding that Hercules had failed to present evidence in support of its divisibility of harm defense.

Hercules appealed that decision, and we reversed and remanded the case to the district court to reconsider Hercules's claim of divisibility in light of the legal standards enunciated in our April 11, 2001, opinion.[5] *United States v. Hercules, Inc.*, 247 F.3d 706 (8th Cir.2001) (*Vertac XI*). In October and December 2001, the district court held an evidentiary hearing on Hercules's divisibility of harm

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4. Litigation began in 1980. For a description of the early procedural history, *see United States v. Hercules, Inc.*, 247 F.3d 706 (8th Cir.2001) and *United States v. Vertac Chem. Corp.*, 966 F.Supp. 1491 (E.D.Ark.1997).

5. In its most recent opinion, the district court noted an inconsistency in our April 11, 2001, opinion. In that opinion, we meant to vacate: (1) the unpublished opinion issued on October 12, 1993, and (2) the denial of the motion to reconsider issued on November 1, 1993.

defense, resulting in a transcript of some 2300 pages in length. The parties submitted post-hearing briefs, together with a voluminous record that included documents, exhibits, transcripts, depositions, and the administrative record. The district court considered the entire record, applied the law as stated in *Vertac XI*, and held that Hercules had failed to establish its divisibility of harm defense, with the exception of one off-site landfill, the Rogers Road landfill (a divisibility finding that the government does not challenge). *United States v. Vertac Chem. Corp.*, 364 F.Supp.2d 941 (E.D.Ark.2005) (*Vertac XII*).

In its final judgment following its March 30, 2005, memorandum opinion and order, the district court held that Hercules and Uniroyal were jointly and severally liable to the United States for the following amounts: (1) Hercules, in the amount of $119,318,504, plus any additional response costs, and (2) Uniroyal, in the amount of $110,410,161, plus any additional costs. The district court had previously allocated the amount of contribution of the total response costs for which each entity was jointly and severally liable. To the extent that the United States enforces its judgment, Hercules is entitled to contribution from Uniroyal in an amount equal to 2.6 percent of $110,410,161, and Uniroyal is entitled to contribution from Hercules in an amount equal to 97.4 percent of $110,410,161.

On appeal, Hercules argues that the district court erred in apportioning liability. Uniroyal argues that we should overturn our holding in *Vertac XI* that affirmed the district court's holding that Uniroyal was liable. Hercules and Uniroyal further argue that the district court's imposition of retroactive liability was unconstitutional.

Appendix A

II. HERCULES'S LIABILITY

Hercules challenges the district court's liability determination on both legal and factual grounds. We will first address Hercules's contention that the district court applied the wrong legal standard in determining whether Hercules established its divisibility of harm defense. We will then turn to Hercules's argument that the drummed waste, the stillbottoms, Operable Unit 1 (OU-1), the Jacksonville Landfill, the soils, and the groundwater are each separate sites capable of further apportionment.

We review *de novo* the district court's legal conclusions. *Richardson v. Sugg,* 448 F.3d 1046, 1052 (8th Cir.2006). We review its factual findings for clear error. *Id.* "Using this standard, we will overturn a factual finding only if it is not supported by substantial evidence in the record, if it is based on an erroneous view of the law, or if we are left with the definite and firm conviction that an error was made." *Id.* We give due regard to the district court's opportunity to judge the credibility of the witnesses. *Id.* "A district court's choice between two permissible views of evidence cannot be clearly erroneous." *Tadlock v. Powell,* 291 F.3d 541, 546 (8th Cir.2002).

A. Legal Standard

Hercules contends that the district court erred in concluding that the site could not be separated into divisible geographic units. As to the drums, Hercules argues that the district court failed to consider whether there existed a single, divisible harm and addressed only whether there existed

distinct harms. The thrust of Hercules's arguments is factual, however, and the district court applied the appropriate legal standard.

In *Vertac XI* we held that a defendant must prove by a preponderance of the evidence that there exists a reasonable basis for divisibility. *Vertac XI,* 247 F.3d at 717.

> The proper standard for determining divisibility . . . is that the defendant show either distinct harms or a reasonable basis for apportioning causation for a single harm. A defendant need not prove that its waste did not, or could not, contribute to any of the harm at a CERCLA site in order to establish divisibility, because it is also possible to prove divisibility of single harms based on volumetric, chronological or other types of evidence. A site may also be divisible if a defendant can establish that it consists of non-contiguous areas of contamination.

Id. at 719 (internal quotations and citations omitted). We noted that proving divisibility is a "very difficult proposition" and that where the harms are incapable of division, the district court should not make an arbitrary apportionment. *Id.* at 717.

In its opinion, the district court applied the standard for determining divisibility as set forth in *Vertac XI.* The district court first considered whether Hercules established a reasonable basis for divisibility by proving by a preponderance of the evidence that the site could be divisible

on a geographical basis.[6] Under its geographical apportionment theory, Hercules argued that each operable unit within the Jacksonville site is a separate site for purposes of divisibility. In considering and ultimately rejecting Hercules's argument, the district court found that the EPA divided the site into operable units for the purposes of remediation and that the "operable units did not solely address geographical portions of the Site." *Vertac XII,* 364 F.Supp.2d at 951.

With regard to the drums, Hercules argues that the district court erroneously held that cross-contamination and commingling of dioxin prevented Hercules from establishing a reasonable basis for divisibility. In *Vertac XI,* we held that a single harm may be treated as divisible when it is possible to discern the degree to which different parties contributed to the damage. "Single harms may also be treated as divisible in terms of degree, based, for example on the relative quantities of waste discharged into the stream. Divisibility of this type may be provable even where wastes have become cross-contaminated and commingled." 247 F.3d at 718 (internal quotations omitted). Hercules, however, did not argue that the drums caused a single, divisible harm that could be apportioned based on relative quantities of waste or volumetric evidence. As the government points out, this argument would have been inconsistent with Hercules's

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6. We have considered Hercules's argument concerning the information contained in one of the government's exhibits (Exhibit K). Because the district court expressly stated at the time it granted the government's motion to withdraw the exhibit that it would not rely on the exhibit in ruling on Hercules's divisibility defense, we conclude that this argument is without merit.

argument that it should not be held liable for any of the drummed waste.

B. Drummed Waste

The 28,500 drums contained 2,4-D and 2,4,5-T stillbottom wastes, dioxin, and other hazardous and toxic substances. When the site went into receivership, the drums were leaking, corroding, and failing. By February 1989, the failed drums had been placed inside new, larger drums (overpacked). Because the drums contained corrosive materials, maintenance of the drums was an ongoing process. The EPA determined that the wastes on the site posed a threat to public health and welfare and the environment. The drummed material was considered acutely hazardous waste, and the EPA chose to dispose of the wastes by incineration. The Arkansas Department of Pollution Control and Ecology (ADPC & E) managed the incineration from 1989 until June 1993, when the EPA took over the on-site incineration of the drums.

Hercules argues that the district court clearly erred in finding the following: (1) the EPA and the ADPC & E decided to incinerate the 2,4-D waste drums because of the dioxin contained therein; (2) Hercules was responsible for the cross-contamination of the plant equipment causing 2,4-D waste drums to contain dioxin; and (3) Hercules was responsible for the commingling of the 2,4-D waste and the dioxin contaminated soil, causing the drums to contain dioxin.

Hercules first argues that it should not be held liable for the cost of incinerating the 2,4-D waste drums because those

drums would have been incinerated regardless of whether they were contaminated with dioxin. The district court concluded that Hercules's argument did not "withstand scrutiny" and found that the EPA and Arkansas were concerned that a potential fire, explosion, or tornado could spread dioxin into the environment. *Vertac XII*, 364 F.Supp.2d at 953. Thus, the district court determined that "[i]t was not, as Hercules argues, the dirt in the drums that drove the incineration; rather it was the dioxin in the dirt that drove the incineration of the drums." *Id.*

As the district court noted in the factual background of the case, the Vertac Rule permitted Vertac to landfill the 2,4-D waste drums only after showing that the drums contained no dioxin. This was never shown, and Phyllis Moore, Ph.D., the former director of the ADPC & E, and Randall Mathis, her successor, testified (1) that time was of the essence, (2) that further testing was expensive and time consuming, (3) that the 2,4-D drums were corroding and failing, and (4) that the drums posed an imminent risk of fire and explosion.

Dr. Moore was involved in the initial decision to incinerate the 2,4-D waste drums. Although she stated that the "issue of dirt" did not influence her decision, Dr. Moore testified that a primary concern was the presence of dioxin in the 2,4-D waste drums, regardless of whether it was transmitted to the drums by cross-contamination at the production facility or by the overpacking of the drums with contaminated soil. J.A. at 26433-34. She further testified that it was important that the method of incineration satisfy the requirements of the ADPC & E and the EPA for destruction

of dioxin. Regarding the ultimate decision to incinerate, Dr. Moore testified that the state "would have looked at other options" if there had been no dioxin in any of the drums. J.A. at 26445. We thus reject Hercules's argument that the incineration of the 2,4-D drums was in no way attributable to dioxin.

Hercules next argues that the district court clearly erred in finding that the equipment at the plant contaminated 2,4-D waste with dioxin after Hercules had cleaned the production vessels in 1970. The district court found that "the cleanup of the equipment was not as thorough as portrayed by Hercules, and that the plant equipment was cross-contaminated with 2,4-D, 2,4,5-T, and dioxin." *Vertac XII,* 364 F.Supp.2d at 952. The district court rejected Hercules's theory that Vertac's chemical production flushed the dioxin out of the production vessels.

In its brief, Hercules recites portions of Arthur Treisback's affidavit, which was excluded as hearsay at trial and is not part of the record on appeal, and relies primarily on Treisback's deposition testimony, portions of which were read into evidence by Richard Karkkainen during his testimony. Treisback was Hercules's plant manager in charge of the 1970 plant cleanup, and Karkkainen was Vertac's director of environment and safety from 1979 to 1986. Karkkainen testified that Treisback's deposition testimony described the common practice of cleaning plant equipment and, although Karkkainen had no personal knowledge of the cleaning, that it was likely that Hercules followed the common practice. J.A. at 26458. Karkkainen further testified that there was no indication that the cleaning process was successful. J.A. at 26562.

Appendix A

The district court also heard the testimony of Reeddie Ray and Stephen Quigley. Ray worked for Hercules from 1964 to 1970 and was involved in the plant cleanup. Ray testified extensively about how the equipment was cleaned. To clean the tanks, "[w]e washed them out with a water hose.... Only time we heated the water if there was sediment in the bottom of the tank." Regarding the process lines, "Process lines were cleaned with steam.... We had to disassemble the lines to get water out of the tank." Ray did not recall using any solvents: "The only time we used solvent is where we wanted to take the sediment and circulate and dissolve something in it, but I don't think we used solvent. I think we just used water and steam, that's all." J.A. at 27522-2? Quigley, Uniroyal's expert, testified that it was unlikely that solvents were used to clean the equipment and even if they were, it is likely that some contamination would remain in the equipment. J.A. at 28089-90. Given the evidence before the district court, we conclude that it did not err in finding that dioxin remained in the plant after Hercules's 1970 cleaning.

Hercules contends that the district court clearly erred in rejecting its flushing theory. According to this theory, after Vertac shifted plant production exclusively to products that do not generate dioxin, about ten production runs would have flushed out any significant amount of dioxin remaining in the plant equipment. Because Vertac stopped producing 2,4,5-T in March 1979, three years after Hercules sold the plant to Vertac, Hercules argued that there could be no detectable dioxin in the 2,4-D waste in late 1979, when Vertac began to accumulate the 2,4-D waste drums. The district court disregarded the flushing theory as, "just that-a theory" and

noted that "[a]fter nearly eight years of only 2,4-D production, dioxin and 2,4,5-T were present in plant equipment." *Vertac XII,* 364 F.Supp.2d at 952.

We conclude that the district court did not err in rejecting Hercules's flushing theory.[7] The district court stated that, because the plant equipment contained dioxin and 2,4,5-T after nearly eight years of 2,4-D production, "the evidence basically disproves the theory." The finding that dioxin was present in the plant equipment is supported by the evidence. An EPA inventory of the process vessels and tanks in the central process area of the Jacksonville site showed that 140 of the 213 process vessels contained chemical material including 2,4-D, 2,4,5-T, and dioxin. J.A. at 19779-80. Of the ninety-six vessels sampled, more than half were contaminated with dioxin at levels greater than 0.3 ppb. J.A. at 19780. Hercules argues that the data showing contamination of the plant equipment was untrustworthy, but Hercules has failed to show that the EPA or the district court relied on that evidence. Hercules's expert witness, Randal Maud, Ph.D., served as the project manager for Hercules at the Jacksonville site to assess the environmental consequences of the site. He testified that the unreliable data, "would likely not be used because of the quality assurance problems." J.A. at 28256.

Finally, with regard to the drummed waste, Hercules argues that the district court erred in holding Hercules liable

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7. Hercules argues that the government's attorney made a judicial admission supporting Hercules's flushing theory. Having reviewed the record, we conclude that the statements in question did not rise to the level of a binding judicial admission.

for the waste that was placed in the drums during overpacking. Hercules contends that either the placement of the dioxin-contaminated soil into the 2,4-D drums constituted a second disposal under CERCLA, for which it is not liable, or that the overpacking by Vertac or the EPA constituted a superseding cause, thereby relieving Hercules of liability. Hercules does not dispute, however, that it contaminated the soil with dioxin at the Jacksonville site.

As the district court recited in its decision, disposal under CERCLA is defined as the "discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such . . . waste . . . may enter the environment." 42 U.S.C. §§ 6903(3), 9601(29). Hercules caused dioxin to enter the environment, thereby disposing of the waste. That Vertac and the EPA overpacked leaking drums in an effort to contain the further contamination of the site does not absolve Hercules of CERCLA liability. Accordingly, Hercules remains responsible for the ongoing contamination caused by the dioxin, for that contamination was not solely caused by the act of a third party.

C. Stillbottoms

Hercules argues that the stillbottom waste was not disposed of until after Hercules sold the plant and that thus it is not responsible for any of the costs related to that disposal. Vertac began accumulating 2,4,5-T stillbottom drums on-site in 1975, and it bought the plant from Hercules in 1976. Hercules claims that Vertac merely stored the waste for the purpose of later recycling, and thus did not dispose

of the waste until 1979, when the registration for 2,4,5-T was suspended. Accordingly, Hercules claims that the 2,4,5-T stillbottom drums constituted a distinct harm and that it should not be liable for their incineration.

Section 103(a) of CERCLA holds liable "any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of." 42 U.S.C. § 9607(a)(2). The term "facility" includes, "any site or area where a hazardous substance has been deposited, stored, disposed of, or placed." 42 U.S.C. § 9601(9). Finally, as we recounted above, disposal includes placing hazardous waste in a manner that allows the waste to enter the environment. Simply stated, the district court found that Hercules owned a facility at which hazardous waste was allowed to enter the environment. Specifically, it found that the stillbottoms leaked onto the ground when Hercules owned the plant. This finding is supported by Quigley's expert testimony: "[W]hen the wastes [stillbottoms] were put into drums for disposal, they were put into recycle drums, ... and those recycle drums did leak, some of them instantaneously upon having the waste put in them, and other times shortly after the waste being put in them." J.A. at 28082. Robert Fischer, a chemist with Hercules and Vertac, also testified that the deterioration of the T drums was one of the major sources of dioxin contamination at the site. J.A. at 27060. In light of this testimony, we conclude that the district court did not clearly err in holding Hercules liable for the incineration of the stillbottoms.

Appendix A

D. Operable Unit 1

OU-1 consisted of the above-ground media, including the process vessels (e.g. the storage tanks, chemical reaction vessels) in the central process area. The ROD for OU-1 required that plant equipment be dismantled and salvaged to the extent possible and that all other nonsalvageable material be placed in an on-site landfill. Any hazardous material not suitable for the landfill was to be incinerated. Hercules implemented the remedy pursuant to Unilateral Administrative Order (UAO) issued by the EPA.

Hercules argues that the district court erred in holding it liable for the cleanup of OU-1, including the demolition, removal, and disposal of plant buildings and equipment, and their process waste contents. Hercules admits liability for part of the OU-1.[8] It contends that it established a reasonable basis of divisibility for further apportioning liability. Hercules argues that the district court erred in finding (1) that the plant buildings were demolished because they contained dioxin, (2) that Hercules was responsible for the contamination of the equipment, the shredded trash, and the pallets, and (3) that the EPA's response action was not arbitrary or capricious.

The district court found that "[t]he buildings were demolished because the risk of collapse might cause release and human exposure to herbicide process contamination, including unacceptable levels of TCDD [dioxin]." We conclude that the record adequately supports this finding.

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8. Hercules accepted responsibility for the spent carbon wastes it generated.

Maud testified that the EPA was concerned about the buildings because they were falling into disrepair and because "they contained large amounts of asbestos siding and roofing and asbestos interiors, some of which also contained dioxin dust." J.A. at 28265. The ROD states that in the event of a catastrophe, "Based on the 2,3,7,8-TCDD (dioxin) concentrations found in [OU-1], human exposure to concentrations in excess of those considered acceptable . . . could occur." J.A. at 19811.

Hercules further contends that the district court clearly erred in finding that Hercules was responsible for the contamination of the plant equipment. In his expert testimony, Eugene Meyer, Ph.D., affirmed the statement from his 1998 affidavit that "[t]he presence of 2,3,7,8-TCDD [dioxin] was established through samples in all of the following: surface and subsurface materials collected from the site sewers, distillation bottoms, waste activated carbons, leachate from on-site buildings, trash, shredded pallets, and the sludges generated during the treatment of waste waters." J.A. at 27928. Although Hercules's project manager for EPA compliance, Douglas Keilman, opined that Hercules did not cause the contamination, his opinion was based on the flushing theory. For the reasons stated above, we again conclude that the district court did not clearly err in rejecting that theory.

The district court found that "Hercules cannot establish that it was not the source of the contamination on the shredded trash and pallets." *Vertac XII*, 364 F.Supp.2d at 955. The shredded trash included things like hard hats, broken tools, and tyvex suits, and the pallets were used to store

drummed waste at the site. Although Keilman testified that the trash had been accumulating since 1980, there was no evidence to show that Vertac, and not Hercules, caused the contamination of the trash. The district court found that the pallets were contaminated by both leaking drums and contaminated soil. Because Hercules is responsible for the contaminated soil, the district court did not err in further holding it responsible for the pallets.

Finally, Hercules argues that the EPA's issuance of a UAO requiring Hercules to dismantle and to landfill the equipment and buildings at the site was arbitrary and capricious. We disagree. Section 113(j) of CERCLA allows a defendant to avoid paying response costs to the extent that it can show that the response action was arbitrary and capricious. 42 U.S.C. § 9613(j). Hercules does not argue that the disposal of the building and equipment is arbitrary and capricious, but rather that the EPA was arbitrary and capricious in issuing a UAO. To support the issuance of a UAO, there must be evidence that there "*may be* an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from a facility." 42 U.S.C. § 9606(a) (emphasis added). Because the record contains sufficient evidence to support the EPA's determination that the cautionary "may be" threat of imminent substantial endangerment had been established, its decision to issue the UAO was not arbitrary and capricious.

Appendix A

E. Jacksonville Landfill

The district court found that Hercules disposed of hazardous wastes at the Jacksonville Landfill and held Hercules liable for the cleanup costs associated with the landfill. In its investigation, the EPA found rusting drums and piles of "white fibrous, absorbent-type materials" at the Jacksonville Landfill. Tests confirmed the presence of dioxin, 2,4,5-T, and other chemicals associated with the Jacksonville site. In its ROD, the EPA called for the excavation of contaminated soils, the replacement and capping of the excavated areas with clean soil, and the cleaning and removal of large refuse items. The contaminated soil and drums were incinerated at the site. Although Hercules admits that it took some nonhazardous waste to the Jacksonville Landfill, it argues that the district court clearly erred in finding that Hercules disposed of hazardous wastes at the Jacksonville Landfill, and it contends that the EPA's response was arbitrary and capricious.

We conclude that the district court's finding is supported by substantial evidence. Indeed, the district court cited the testimony by four Hercules employees that they took chemical wastes to the Jacksonville Landfill. Billy Honey worked maintenance at the plant from the time Hercules bought it until it closed. J.A. at 26291. He testified that he hauled drums filled with chemical waste to the Jacksonville Landfill. J.A. at 26299-300. Doyce Shurley worked for Hercules in the early 1960s, and he recalled taking a barrel of stillbottoms to the landfill. Vincent Dodson worked for Hercules in the late 1960s, and he testified that chemical wastes were disposed of at the landfill. When asked what

type of waste was taken to the Jacksonville landfill, Leroy Jordan replied, "We took [waste] from each trash pick-up point. We took it from every rig and barrels. We cleaned out the incinerator and carried that stuff over there. Anything that they needed to get rid of, and that included benzen barrels, trash from the lunchroom, barrels of goop, acid, anything and everything." J.A. at 26352.

Hercules argues that this testimony should be discredited because it presented contradictory evidence to counter it. The short answer to this contention is to note once again that a district court's choice between two permissible views of the evidence is no basis for a conclusion that its factual finding is clearly erroneous. *Tadlock,* 291 F.3d at 546.

Hercules contends that the EPA's response to the Jacksonville landfill was inappropriate for the following reasons: (1) the cancer potency factor used by the EPA in its risk assessment constitutes a rule under the Administrative Procedures Act (APA) that must be overturned because it was not subject to notice and comment, and (2) the EPA's exposure assumptions were arbitrary and capricious. We disagree.

The cancer potency factor was used to calculate the risk and to set dioxin cleanup standards for the soil and sediments at the Jacksonville site. To determine whether a statement by an agency is a legislative rule or policy, we apply the two-part test of *McLouth Steel Prod. Corp. v. Thomas,* 838 F.2d 1317, 1320 (D.C.Cir.1988). A policy statement (1) does not have a binding effect; it does not impose any rights and obligation; and (2) a policy "genuinely leaves the agency and

its decisionmakers free to exercise discretion." *Id.* (internal quotations omitted). The district court concluded that the "Health Assessment Document which set forth the cancer potency factor does not impose any rights [or] obligations. It is at most only a technical and advisory report. It did not obligate the agency or public in determining acceptable risks associated with dioxin." *United States v. Vertac Chem. Corp.*, 33 F.Supp.2d 769, 779 (E.D.Ark.1998) (*Vertac IX*).

This finding is adequately supported by the record. As the district court noted, the EPA Regional Administrator considered the lower figure proposed by Hercules's contractor, ChemRisk, and rejected it. Indeed, in the ROD for the Jacksonville landfill, the EPA addressed why ChemRisk's calculations would not be used, "Hercules Inc. submitted a report prepared by ChemRisk which provided calculations resulting in cleanup goals differing from EPA's for dioxin. The report utilized certain calculations and assumptions which were contrary to EPA guidance and resulted in cleanup goals much less restrictive than those calculated by the EPA." J.A. at 16407. The document goes on to discuss the discrepancies between the EPA's and ChemRisk's methods of calculating site related risks and to explain that the EPA rejected ChemRisks proposal because "ChemRisk's proposed cleanup goals, using EPA's risk assessment approach, would not result in excess cancer risks (after remediation) within the acceptable risk range." J.A. at 16408. The EPA considered Hercules's comments on the EPA's application of the cancer potency factor with regard to the cleanup levels at the site and responded to the comments in the final RODs.

Appendix A

Hercules argues that the exposure assessments used by the EPA were arbitrary and capricious and did not justify the remedial order. Having considered the ROD and related evidence, we conclude that this argument is without merit.

F. Soils and Groundwater

The revised ROD for Operable Unit 2 (OU-2) addressed contaminated on-site soils, foundations, and underground utilities and off-site soils and sediments that had been excavated from off-site areas and stored on the site. The remedy selected required the excavation of dioxin contaminated soil, and the disposal of this soil in an on-site containment vault. The ROD for Operable Unit 3 (OU-3) dealt with groundwater contamination under the site. It states that "groundwater contamination at the site is complex, resulting from past waste management and disposal practices. Sources of contamination include on-site landfills, spills and discharges into the central ditch, Reasor Hill well, and other parts of the central process area." J.A. at 20136.

Hercules argues that the soil and groundwater contamination were divisible as successive harms based on the relative production volumes of 2,4,5-T and 2,4,5-TP attributable to Hercules from 1961 until it sold the plant in 1976 and to Vertac from that point until it ceased production of 2,4,5-T in 1979. Based on the estimated production figures, Keilman determined that Hercules was responsible for 70.74% of the EPA's response costs. J.A. at 27177. To reach this figure, Hercules relied on the following assumptions and evidence: (1) Hercules assumed that leaks and spills took place at roughly the same frequency and severity during the

plant's production of 2,4,5-T and 2,4,5-TP; (2) Keilman testified that prior to 1965, most of the dioxin left the plant with the product; (3) Hercules offered evidence that the half-life of dioxin in soil is approximately twelve years, though it ranged from a few days to decades; and (4) Hercules touted its housekeeping and maintenance practices as being far superior to those of Vertac.

The district court determined that this evidence was not sufficiently concrete and specific to apportion the harm. Most importantly, there was no evidentiary basis for Hercules's assumption that the release of wastes at the site was related to production volumes, nor was there any testimony that there was any reasonably constant ratio or direct correlation between the releases of dioxin and production of dioxin generating products. As the district court pointed out and as the record reveals, the production methods changed over the years, the specifications for the product varied, Hercules and Vertac used different methods of disposal of dioxin contaminated filter paper and cardboard drums, and each companies experienced different plant eruptions. Although Hercules may be able to fairly estimate the production volumes of 2,4,5-T and 2,4,5-TP from the time it owned the plant, the district court correctly held that it cannot establish the inferences necessary to prove a reasonable basis for apportionment of harm.

Hercules argues that the EPA's response choices for the soils, groundwater, and off-site areas are arbitrary and capricious and that Hercules should not be held liable for the corresponding response costs. Having considered the record, we conclude that Hercules's argument is without merit.

III. UNIROYAL'S LIABILITY

Uniroyal argues that we should hold that it is not liable as an arranger under CERCLA, and thus overturn the panel's decision in *Vertac XI*. "When a case has been decided by this court on appeal and remanded to the district court, every question which was before this court and disposed of by its decree is finally settled and determined." *Klein v. Arkoma Prod. Co.*, 73 F.3d 779, 784 (8th Cir.1996). Absent intervening controlling authority, we are bound by the decision of the previous panel. *Liberty Mut. Ins. Co. v. Elgin Warehouse & Equip.*, 4 F.3d 567, 571 (8th Cir.1993). Uniroyal pointed to no new controlling authority, and thus the affirmance of the district court's finding of liability in *Vertac XI* is the law of the case. Because that holding is not "clearly erroneous" nor does letting it stand "work a manifest injustice," we refuse to disturb it. *Liberty Mut. Ins. Co.*, 4 F.3d at 570-71.

IV. RETROACTIVITY

Hercules and Uniroyal contend that the retroactive application of CERCLA to impose liability is unconstitutional under the Supreme Court's decision in *Eastern Enterprises v. Apfel*, 524 U.S. 498, 118 S.Ct. 2131, 141 L.Ed.2d 451 (1998). We previously resolved this exact issue in *United States v. Dico*, in which we held that CERCLA's retroactive application remained constitutional after *Eastern Enterprises*. *Dico*, 266 F.3d 864, 879-880 (8th Cir.2001). We are thus bound by our Circuit's precedent and accordingly will not revisit the issue. *See United States v. Wright*, 22 F.3d 787,

788 (8th Cir.1994) ("[A] panel of this Court is bound by a prior Eighth Circuit decision unless that case is overruled by the Court sitting *en banc*.").

V. CONCLUSION

The judgment is affirmed.

APPENDIX B — OPINION OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF ARKANSAS, WESTERN DIVISION DATED MARCH 30, 2005

UNITED STATES DISTRICT COURT
E.D. ARKANSAS
WESTERN DIVISION

No. CIV. 4:80CV00109GH

UNITED STATES OF AMERICA,

Plaintiff,

v.

VERTAC CHEMICAL CORP., *et al.*,

Defendants.

March 30, 2005.

MEMORANDUM OPINION AND ORDER

GEORGE HOWARD, JR., District Judge.

The Vertac Site in Jacksonville, Arkansas, has been the focus of litigation for 25 years. The history of the Vertac Site and Off-Site areas has been discussed in numerous prior decisions.[1] This Court previously found both Hercules

1. *United States v. Vertac Chem. Corp.*, 489 F.Supp. 870 (E.D.Ark.1980); *United States v. Vertac Chem. Corp.*, 588 F.Supp. 1294 (E.D.Ark.1984); *United States v. Vertac Chem. Corp.*, 671 (Cont'd)

Incorporated ("Hercules") and Uniroyal Chemical Limited ("Uniroyal")[2] jointly and severally liable under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), 42 U.S.C. §§ 9601 *et seq.* for all response costs incurred and to be incurred by the United States at the Site and related areas, and entered judgment in the amount of $102,878,641.35. *United States v. Vertac*, 33 F.Supp.2d 769 (E.D.Ark.1998). In what was hoped to be the last decision in this matter, the Court allocated the costs between Hercules and Uniroyal. *United States v. Vertac*, 79 F.Supp.2d 1034 (E.D.Ark.1999).

GENESIS OF THIS DECISION

On October 12, 1993, the Court granted the United States' motion for summary judgment and found that Hercules was jointly and severally liable under Section 107(a)(2) and (3) of CERCLA, 42 U.S.C. § 9607(a)(2) and (3) for the response costs incurred by the United States with regard to the Vertac Site. Hercules moved for reconsideration,

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(Cont'd)

F.Supp. 595 (E.D.Ark.1987), *vacated*, 855 F.2d 856 (8th Cir.1988); *United States v. Vertac Chem. Corp.*, 756 F.Supp. 1215 (E.D.Ark.1991), *aff'd*, 961 F.2d 796 (8th Cir.1992); *United States v. Vertac Chem. Corp.*, 966 F.Supp. 1491 (E.D.Ark.1997); *United States v. Vertac Chem. Corp.*, 33 F.Supp.2d 769 (E.D.Ark.1998); *United States v. Vertac Chem. Corp.*, 79 F.Supp.2d 1034 (E.D.Ark.1999). *See also O'Dell v. Hercules, Inc.*, 687 F.Supp. 450 (E.D.Ark.1988)(*O'Dell-Bridges*), *aff'd* 904 F.2d 1194 (8th Cir.1990).

2. As of January 30, 2001, the name of Uniroyal Chemical Limited was changed to Crompton Co./Cie. For ease and consistency, the Court will continue to use the name Uniroyal.

at which time it argued that disputed issues of fact existed regarding divisibility. The Court, on November 1, 1993, denied the motion for reconsideration, finding, *inter alia*, that Hercules had failed to present evidence in support of its divisibility of harm argument.

On December 19, 1999, Hercules appealed the Court's summary judgment ruling, arguing in part that the harm at the Site is divisible. On April 11, 2001, the Eighth Circuit Court of Appeals reversed the Court's summary judgment against Hercules on the issue of liability and remanded the case for the Court to "address evidence supporting divisibility in light of the proper legal standards." *United States v. Hercules, Inc.*, 247 F.3d 706, 719 (8th Cir.2001).[3] The Eighth

3. The Eighth Circuit's decision is somewhat confusing. The court stated that it was vacating *United States v. Vertac Chem. Corp.*, 841 F.Supp. 884 (E.D.Ark.1993) ("*Vertac V*"). *Vertac V* however dealt only with the liability of the United States. In that case, Vertac, Hercules and the State of Arkansas argued that the United States should be held liable under CERCLA for its role in the production of Agent Orange. The United States filed a motion for partial summary judgment asking that the Court find that it is not liable.

The Court found the United States not to be liable, denying the motions of Vertac, the State of Arkansas, and Hercules and granting the motion of the United States.

The Eighth Circuit Court of Appeals affirmed the Court's conclusion that the United States was not liable as an "operator" or "arranger" in *United States v. Vertac Chem. Corp.*, 46 F.3d 803 (8th Cir.1995) ("*Vertac VI*").

(Cont'd)

Circuit also vacated the Court's judgments on response costs, *United States v. Vertac Chem. Corp.*, 33 F.Supp.2d 769 (E.D.Ark.1998) ("*Vertac IX*") and allocation, *United States v. Vertac Chem. Corp.*, 79 F.Supp.2d 1034 (E.D.Ark.1999) ("*Vertac X*") pending the Court's reconsideration of Hercules' claim of divisibility. 247 F.3d at 721.

The Court scheduled a limited evidentiary hearing on the divisibility of harm defense raised by Hercules. The hearing was held between October 9 and 19, 2001 and December 11 and 12, 2001. The parties subsequently filed post-hearing briefs. The record, needless to say, is voluminous, comprising not only the numerous filed documents, but exhibits and transcripts admitted at the evidentiary hearing, exhibits and transcripts of the various trials in this action, evidentiary and deposition testimony of other federal actions involving Hercules, and the

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(Cont'd)

Vertac V did not grant summary judgment on the United States' motion for summary judgment against Hercules on the issue of liability and did not address Hercules' argument concerning divisibility of harm. The finding of joint and several liability of Hercules was issued in an unpublished decision entered on October 12, 1993. (document no. 1826) (granting United States' motion for partial summary judgment against Hercules on the issue of liability under CERCLA). The subsequent order denying Hercules' motion for reconsideration on the issue of divisibility, also unpublished, was entered on November 1, 1993 (document no. 1875)(denying Hercules' motion for reconsideration of October 12, 1993 Order).

Should the Eighth Circuit again address this case, it might want to clarify the record. It is unclear whether the Court's decision in 841 F.Supp. 884 and affirmed in 46 F.3d 803 concerning the United States' liability should have been vacated.

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52,000-page Administrative Record (AR) for the Site which has been filed in this action as 8 compact discs (see docket entry 2454). The Court has worked diligently to carefully review the record in considering this case.

FACTUAL BACKGROUND

The Vertac Chemical Plant Site ("Site") consists of approximately 93 acres in Jacksonville, Arkansas. The Site was originally developed by the federal government in the 1930s as a munitions factory. Around 1948, Reasor-Hill Corporation ("Reasor-Hill"), a now defunct company, purchased the Site and first formulated finished insecticide products, primarily DDT, aldrin, dieldrin, and toxaphene. In the mid-1950s, Reasor-Hill modified the plant and began manufacturing phenoxy herbicides, primarily 2,4, dichlorophenoxyacetic acid ("2,4-D"), 2,4,5 trichlorophenoxyacetic acid ("2,4,5-T") and 2,4, 5 trichloropropionic acid ("2,4,5-TP" or "Silvex"). *United States v. Vertac Chem. Corp.*, 489 F.Supp. 870, 873 (E.D.Ark.1980) ("*Vertac I*"). The chlorinated compound 2,4,5-trichlorophenol (2,4,5-TCP or TCP) was an intermediate in the 2,4,5-T manufacturing process. The manufacture of 2,4,5-T creates a highly toxic byproduct, 2,3,7,8-tetrachlorodibenzo-p-dioxin ("dioxin" or "TCDD") that is now viewed as hazardous to humans. *Vertac XI* at 712. All of the herbicide related compounds are listed hazardous wastes under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6921, 40 C.F.R. §§ 261.31, 261.33, and the compounds 2,4,5-T, 2,4,5-TCP, 2,4,5-TP are designated as "Acute Hazardous Wastes" under RCRA. 40 C.F.R. § 261.31. Additionally, all of the phenoxy herbicides and TCP are designated as hazardous substances under CERCLA. *See* 42 U.S.C. 9601(14); 40 C.F. R § 302.4.

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Reasor-Hill did not have a process to treat the waste water that was produced. *United States v. Vertac Chem. Corp.*, 966 F.Supp. 1491, 1494 (E.D.Ark.1997) ("*Vertac VIII*"). While Reasor-Hill operated the Site, an unknown quantity of untreated chemical wastes from the production process flowed through cooling ponds on the west side of the plant into a nearby stream. Reasor-Hill disposed of large quantities of pesticide (insecticide) and phenoxy herbicide wastes by leaving the wastes in drums on the Site. *Vertac I* at 874.

Hercules bought the Site from Reasor-Hill in 1961 and continued to manufacture herbicides, including 2,4-D and 2,4,5-T, at the plant until 1971. *United States v. Hercules*, 247 F.3d 706, 712 (8th Cir.2001)("*Vertac XI*"). When it commenced operations at the Plant, Hercules found and then buried on-site thousands of drums of pesticide and herbicide wastes left by Reasor-Hill. *Vertac VIII* at 1494-95. The southeast corner of the Site where Hercules buried the drums was known as the Reasor-Hill drum burial area.

Hazardous substances, including insecticides, phenoxy herbicides and TCDD dioxin, leached and flowed from the Reasor-Hill drum burial area into Rocky Branch Creek.

Until late 1964, Hercules continued Reasor-Hill's practice of discharging untreated wastewater directly into Rocky Branch Creek. *Vertac I* at 874. The waste water which resulted from the manufacturing of 2,4,5-T or 2,4,5-TP contained dioxin. *Id.* In 1964, Hercules constructed a waste water pretreatment system, which consisted of a neutralization trench designed to reduce the acidity of the water, an equalization basin designed to stabilize the rate of

flow into the City of Jacksonville's sewage system, and a pump and pipe to deliver the treated waste water to the Jacksonville sewage system. *Id.* The waste water pretreatment system did not remove the dioxin. The basin frequently overflowed directly into Rocky Branch Creek during heavy rainfalls, and leaked.

Hercules manufactured formulations of 2,4,5-T, Silvex and 2,4,-D acids for commercial customers. It used some of the same equipment to manufacture both 2,4-D and 2,4,5-T products, but the equipment could not manufacture both simultaneously.

In 1964, Hercules was awarded a contract to produce Agent Orange for the U.S. Department of Defense ("DOD").[4] It produced and supplied Agent Orange to DOD through 1968. Agent Orange was a 50/50 mixture of the butyl esters of 2,4,5-T and 2,4,-D acids; a much more concentrated form of the acids than that sold by Hercules to its commercial customers. Dioxin was formed as a by-product during the production of Agent Orange. *Vertac VIII* at 1494. Due to strict specifications in the Agent Orange contracts, Hercules was forced to discard as waste more significant quantities of material that did not meet specifications than was discarded during production for commercial customers. At the same time, Hercules continued manufacturing 2,4,5-T, silvex and 2,4-D for its commercial customers. As a result of the increased production, the volume of wastes generated at the Plant also increased.

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4. Agent Orange was an herbicide used as a defoliant in Vietnam. *United States v. Vertac Chem. Corp.*, 46 F.3d 803, 805 (8th Cir.1995).

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In 1965, Hercules discovered that in the manufacture of 2,4,5-T, dioxin was generated in the process, specifically in the dechlorinator, also known as the "sputnik."[5] In that same year, it began utilizing a "toluene extraction" system during which dioxin and other impurities that were extracted underwent a distillation process producing a residue (stillbottoms). The toluene stillbottoms were contaminated with TCDD and 2,3,7,8-tetrachloro-dibenzo-furan (TCDF). Hercules buried drums of toluene stillbottoms and 2,4-D wastes at the Site and disposed of them in the landfill areas. *Vertac VIII*, at 1494. *See also Vertac I* at 875.

The drums were allowed to collect in the process areas, sometimes for several months, before being transported to the drum burial pit. The drums were thin gauge and were in poor condition. Leakage occurred at the point of storage and in transporting the drums to the drum burial area. Hercules' practice was to scoop up any contaminated soil around the leaking drum and place it into the drum.

Between June of 1964 and May of 1968, Hercules produced almost 3 million gallons of undiluted Agent Orange for DOD.

After the Agent Orange contracts terminated in 1968, Hercules continued manufacturing 2,4,5-T, silvex and 2,4-D for commercial customers until June 1970. *Vertac VIII* at 1495-96. In late 1970, Hercules ceased production at the Site

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5. Tr.2001 at 877. The dechlorinator is the vessel in which dioxin in formed during the process of making trichlorophenol. Hercules later increased the number of "sputniks" from one to three.

and cleaned it or "mothballed" it for the winter as Hercules began to seek a buyer or lessee of the Plant.[6]

On October 1, 1971, Hercules leased the Site to Transvaal, Inc. ("Transvaal") which later became Vertac Chemical Corporation ("Vertac"). Among the actions Transvaal took prior to starting operations was the redrumming of about 50 to 100 55-gallon drums of 2,4,5-T wastes, some of which were leaking.[7] Transvaal continued to manufacture 2,4,-D, 2,4,5-T and 2,4,5-TP and continued to bury wastes on site. In 1975, Transvaal began shipping its 2,4-D waste to off-site landfills and began to store its 2,4,5-T stillbottoms above ground with the hope of recycling the waste.[8] *Vertac XI* at 712. All waste burial took place while Hercules owned the plant.

In August of 1976, Transvaal purchased the Site from Hercules and reorganized as Vertac. Vertac continued to make 2,4-D, 2,4,5-T and 2,4,5-TP. *Vertac I* at 874. Vertac continued its operations until 1986, when it abandoned the Site altogether.

On February 28, 1979, the Environmental Protection Agency ("EPA") suspended many of the uses of 2,4,5-T. *Vertac I* at 875. On March 15, 1979, Vertac voluntarily ceased

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6. The extent of Hercules' cleanup of the plant is in dispute and is discussed below.

7. December 12, 1988 Deposition of Jerry Keister, p. 6-7

8. The drums of the toluene stillbottoms were still on-site when the State of Arkansas ordered them to be redrummed. 2001 Tr. at 734.

manufacturing 2,4,5-T and 2,4,5-TP and overpacked its 2,4,5-T stillbottom drums. *Id.*[9]

In 1980, Vertac recommenced the manufacture of 2,4-D. It began redrumming, or overpacking, leaking drums that it had accumulated on site.[10] Spilled material along with dirt, dust, and debris were scooped up and placed into the overpacking drums.

EPA found that the 2,4-D wastes had been contaminated with TCDD. On February 26, 1980, EPA issued a proposed rule under the Toxic Substances Control Act ("TCSA") to prevent Vertac from disposing of TCDD wastes from the Site. The rule, known as the "Vertac Rule," became effective March 11, 1980[11] and final May 19, 1980.

The Vertac Rule prohibited the off-site shipment of 2,4,-D wastes which contained TCDD.[12] However, if Vertac could show that a batch of 2,4-D was manufactured and produced wastes free of dioxins, it could ship those wastes and all subsequent wastes for off-site disposal unless it went back to manufacturing 2,4,5-T. *Vertac IX* at 780.

According to testimony at the hearing on the proposed rule, Vertac had approximately 3200 drums of wastes

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9. The recontainerization was pursuant to a June 15, 1979 Order by the Arkansas Department of Pollution Control and Ecology ("ADPC & E"). *Vertac I* at 875-876.

10. 2001 Tr. at 354

11. 45 Fed.Reg. 15592

12. *Id.*

resulting from the production of 2,4,-D. Analysis by Vertac of three samples from 700 drums of wastes resulting from the initial production of 2,4-D revealed TCDD levels of approximately twenty parts per billion ("ppb").[13] Vertac then sent samples of its 2,4-D wastes to Wright State University and to Monsanto for testing. Monsanto was unable to detect TCDD with its analytical equipment, but Wright State detected TCDD in composite samples taken from 700 drums of "D" wastes of .7 ppb 2,3,7,9-TCDD.[14] *Vertac IX* at 780. It subsequently found .5 ppb in another sampling of 1000 drums and a third sampling done on an undisclosed number of drums found .3ppb TCDD.[15]

Finding that dioxin was present in the 2,4-D wastes, Vertac stopped sampling and allowed the "D" wastes to accumulate. Subsequent testing by the State of Arkansas as well as the results of trial burns revealed the presence of TCDDs and TCDFs in the drums. *Vertac IX* at 781.[16] Both TCDD and TCDF were generated exclusively in the manufacture of 2,4,5-T and 2,4,5-TP, but not in the manufacture of 2,4-D.

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13. 45 Fed.Reg. 32678.

14. Hercules contends that the Monsanto results of non-detect were more reliable than the Wright State University results, although Hercules' witness Robert Fisher acknowledged that Wright State had a high resolution mass spectrometer which Monsanto did not have.

15. 2001 Tr. at 1647.

16. *See also e.g.*, 2001 Tr. at 1665-1678 discussing results obtained in 1993 by Richard Ehrhart, EPA Remedial Project Manager for the incineration project of about 400 drums of 2,4-D wastes.

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The 2,4-D waste drums, because of the acidic nature of their contents and their condition resulting from their storage and handling, failed at a rapid rate. Beside being stored on soil, the drums were also stacked several deep, three high, and unbanded, by the thousands.

Vertac ceased operations in 1986 and abandoned the Site in 1987. *Vertac VIII* at 1495.[17] When Vertac abandoned the Site in January of 1987, there were nearly 29,000 drums containing waste materials, including 2,4,5-T, 2,4,-D and dioxin. "Many of these drums had corroded and leaked, contaminating more soil, groundwater, and buildings at the site." *Vertac XI* at 712. Over 15,000 drums stored outside were exposed to the elements. "Drums were stacked three high on deteriorating pallets." *Vertac IX* at 772. The drums were failing at a rate of between five to 300 per week.[18]

"EPA determined that the wastes on the site posed a threat to public health and welfare and the environment. Residents in the area could be exposed to hazardous substances and should a large release occur, in the event of a tornado, fire, or continued poor maintenance, the toxic waste could contaminate the environment. EPA initiated a removal action in 1987 to stabilize the drums and tanks and to provide site security." *Vertac IX* at 772.

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17. *See also United States v. Vertac Chem. Corp.*, 671 F.Supp. 595 (E.D.Ark.1987) for a description of Vertac's actions in 1986 and 1987. The Eighth Circuit Court of Appeals vacated the decision because Inter-Ag, the entity who purchased Vertac's assets, had not been joined as a party to the action. 855 F.2d 856 (8th Cir.1988) (Table).

18. 2001 Tr. at 1427, Ex. 8073.

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Some of the drums were labeled "T" waste, some were labeled "D" waste, some were marked "T" and "D" and some were not marked at all. Many of the markings were indistinguishable or unreadable. *Vertac*, 671 F.Supp. at 606.

"The drummed material was considered acutely hazardous waste and was characterized as 'F-listed' wasted under applicable . . . RCRA regulations, 42 C.F.R. Part 261, App. VII." *Vertac IX* at 772. EPA chose to dispose of the wastes by incineration. When the incineration of the drums commenced, the contents of the drums were found to have different wastes including 2,4,-D, 2,4,5-T, 2,4,5-TP, dioxins, dibenzofurans, and all sorts of various materials ranging from dirt to broken pipes. EPA completed the on-site incineration of the 2,4-D drummed waste in October, 1994. The remaining 3260 drums of 2,4,5-T wastes were shipped off-site for incineration. Off-site shipment was completed in March, 1996. *Vertac IX* at 774.

SCOPE OF REVIEW

Hercules argues that in its latest order the court of appeals vacated all previous findings of fact of this Court. That is, the Court is now free to consider new evidence and new facts. Hercules basically contends that the only evidence the Court may now consider is that which was introduced at the hearing on divisibility of harm that the Court conducted in 2001.

The Court ordered a hearing to consider additional evidence on the issue of divisibility of harm. The Court finds that it can consider the existing record. The Eighth Circuit merely remanded the case for the Court to determine, based

on the record, whether Hercules had established a basis for establishing divisibility of harm. The Court of Appeals did not remand for a new trial.

The United States has already established, and the Court has previously found, that there were releases and threats of releases of hazardous substances during the time Hercules owned or operated the Site, which caused the United States to incur response costs. This is sufficient to establish Hercules' liability under CERCLA for response costs. However, it does not resolve the issue of liability completely. Hercules can "escape joint and several liability" if it can demonstrate that the harm incurred at the Site is divisible. *United States v. Alcan Aluminum Corp.*, 315 F.3d 179, 185 (2d Cir.2003).

> The universal starting point for divisibility of harm analyses in CERCLA cases is the Restatement (Second) of Torts, which provides for the apportionment of damages among two or more parties when at least one is able to show either (1) "distinct harms" or (2) a "reasonable basis for determining the contribution of each cause to a single harm." Restatement (Second) of Torts § 433A (1965).

Vertac XI, at 717.

Section 433A of the Restatement (Second) of Torts entitled "Apportionment of Harm to Causes," provides as follows:

> (1) Damages for harm are to be apportioned among two or more causes where

(a) there are distinct harms, or

(b) there is a reasonable basis for determining the contribution of each cause to a single harm.

In other words, the defendant must prove that "there is a way to determine what portion of the harm (i.e. the hazardous substances present at the facility and the response costs incurred in dealing with them) is fairly attributable to the defendant as opposed to other responsible parties." *United States v. Manzo*, 279 F.Supp.2d 558, 562 (D.N.J.2003) (quoting *United States v. Rohm & Haas Co.*, 2 F.3d 1265, 1280 (3d Cir.1993)). " 'Distinct harms' are 'those that may properly be regarded as separate injuries.' " *Vertac XI* at 717.

The burden is on Hercules to establish that there is a reasonable basis for divisibility of harm. That burden is substantial. *United States v. Alcan Aluminum Corp.*, 315 F.3d 179, 185 (2d Cir.2003). The evidence in support of divisibility "must be concrete and specific." *Vertac XI* at 718. "[T]he question whether there is a reasonable basis for apportionment depends on whether there is sufficient evidence from which the court can determine the amount of harm caused by each defendant." *In the Matter of Bell Petroleum Svcs., Inc.*, 3 F.3d 889, 903 (5th Cir.1993)(*Bell Petroleum*). "[W]here causation is unclear, divisibility is not an opportunity for courts to 'split the difference' in an attempt to achieve equity." *Id.* A court should not settle on a compromise amount that it believes approximates the relative responsibility of the parties. If in doubt, the court should impose joint and several liability. *United States v. Township of Brighton*, 153 F.3d 307, 319 (6th Cir.1998).

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ANALYSIS

Hercules advances several arguments in support of its divisibility defense. It advances a type of "geographical apportionment" theory, that is, that the harm at the Site is divisible on the basis of operable units.[19] Each operable unit should be considered, according to Hercules, a separate "site." As to these different areas, Hercules argues that it is liable only for the harm that it caused. Different approaches are used, depending on the area. Thus, with regard to the incineration of the drummed wastes, Operable Unit 1 (plant equipment) ("OU-1") and the Jacksonville and Rogers Road landfills, Hercules contends that it has no liability. As to the remaining sites, Hercules admits that it has some responsibility for contamination of on site soils and groundwater and the Off-Site Areas. It argues, however, that the Court should apply a volumetrics approach for dividing the harm.

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19. Operable unit means a discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of a release, or pathway of exposure. The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site.

40 C.F.R. § 300.5.

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EPA and Uniroyal assert that Hercules cannot establish that the harm is divisible because of the extensive cross-contamination and commingling of dioxin and other hazardous substances throughout all areas of the Site. They note that Hercules' operations and extensive waste disposals at the Plant and on other areas of the Site from 1961 to 1971 contributed massive amounts of dioxin and other hazardous substances to the Site. Furthermore, Hercules also owned the Plant during the first five years of Transvaal/Vertac's operations there, and it is therefore legally responsible under CERCLA for Vertac's waste disposals during the period from 1971-1976.

The EPA divided the Site into separate operable units for purposes of facilitating the remediation. The attempt to apportion the harm based on operable units was rejected by the court in *United States v. Manzo*, 279 F.Supp.2d 558, 574 (D.N.J.2003). "An operable unit is 'a discrete action that comprises an incremental step toward comprehensively addressing site problems.' 40 C.F.R. § 300.5. It is not a site, although it 'may address geographical portions of a site.' " Furthermore, in *Manzo* as here, the operable units did not solely address geographical portions of the Site.[20]

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20. Randal Maud, Hercules' expert in environmental remediation and Project Manager at the Site, testified that the Site was divided into "logical areas of study." At first Operable Unit 1 was all engineering structures above the land surface and Operable Unit 2 was everything at land surface and below. Ground water was spun off into a separate operable unit for administrative purposes. 2001 Tr. at 2068-69.

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The Court is not persuaded that EPA's selection of remedial actions alone is a basis for dividing the harm. *See Washington v. United States*, 922 F.Supp. 421, 428 (W.D.Wash.1996)(EPA's selection of remedial actions provides no basis for apportioning harm).

The Court will proceed to address the arguments raised by Hercules, and determine whether there is a basis to divide the harm in each of the areas.

Drummed Wastes

As discussed above, when EPA arrived at the Site after Vertac abandoned in it found over 28,000 drums of waste stored on the Site. The drummed wastes were incinerated as part of a series of continuing removal actions that the State of Arkansas and the EPA began in 1987.

There is no dispute that the 2,4-D waste drums were accumulated on the Site beginning in late 1979, at least three years after Hercules had sold the plant site to Vertac. Had the drums merely contained identifiable 2,4-D wastes, the Court might find that Hercules' divisibility of harm argument had merit. But, because they contained other hazardous substances which were produced while Hercules owned the plant, Hercules must demonstrate a basis for finding the harm divisible.

Hercules makes several arguments to support its contention that it is not liable for the incineration of the drummed wastes. It has consistently contended that the approximately 25,000 drums of 2,4-D waste and

approximately 3,000 drums of 2,4,5-T still bottoms left behind when Vertac abandoned the Site on January 31, 1987, were each "distinct" harms, to which Hercules did not cause EPA's response costs.

Dioxin was found in the drums. The United States posits two sources of contamination of the 2,4-D drums with TCDD, TCDF,2,4,5-T and 2,4,5-TP One is the cross-contamination from the equipment, especially equipment used in both the production of 2,4-D and 2,4,5-T. The second source is the contaminated soil, trash, debris and other materials placed into the drums during the multiple overpackings. The soil could have been contaminated with dioxin produced during Hercules' operation of the plant. No one can say that the dioxin in the "D" drums did not come from Hercules.

Despite Hercules' contention that the drums didn't leak, there is ample evidence to show that the drums of 2,4,5-T still bottoms did leak on the ground when Hercules owned the plant.[21] The on-site soils, especially, in the process area, contained hazardous chemicals.[22]

The soil was contaminated with wastes generated by Hercules and Vertac. The drummed wastes stored on site leaked at one time or another and had to be overpacked.

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21. Robert Fisher, a chemist with Hercules and Vertac, and one of the persons considered most knowledgeable about Hercules' operations, testified that the deterioration of the T drums was one of the major sources of dioxin contamination at the Site. 2001 Tr. at 907.

22. *See* e.g. Remedial Investigation and Feasibility Study for OU-2.

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During overpacking, the chemical material that had leaked out on to the soil would be scooped up and put into the overpacked drum. Thus, the D-drums most likely contained soil contaminated by Hercules' operations which had been scooped up when the corroding drums were overpacked.

Hercules argues that it could not have caused the waste to be contaminated through the production process or through the placement of contaminated dirt into the drums at a later date. With regard to the production process, Hercules argues that it thoroughly cleaned out the production vessels in 1970, while looking for a buyer or lessee.

The same equipment was used to produce 2,4,-D and 2,4,5-T. Testimony at the hearing revealed that the cleanup of the equipment was not as thorough as portrayed by Hercules, and that the plant equipment was cross-contaminated with 2,4-D, 2,4,5-T and dioxin.[23]

Hercules also relies on a "flushing theory," i.e., that the thousands of batches of material Vertac ran through the production vessels would have thoroughly flushed the dioxin from the vessels to the point when it would be virtually non-existent.[24] Thus, there should not have been, according to Hercules, any residual contamination in the 2,4-D drums

23. *See* discussion of clean-up of OU-1, *infra*.

24. According to the "flushing theory," if one makes a batch of 2,4,5-T and leaves 10% of the 2,4,5-T in the process vessel, each subsequent batch of 2,4-D made would reduce the amount of 2,4,5-T in the product such that in the period of time from 1971 to 1979 there would be less than one molecule remaining in any initial residual material. 2001 Tr. at 366-367.

which were generated and stored by Vertac between the fall of 1979 and 1986.

Hercules' flushing theory remains just that-a theory. It has not been subjected to scientific testing and validation. Rather the evidence basically disproves the theory. After nearly eight years of only 2,4-D production, dioxin and 2,4,5-T were present in the plant equipment.

Hercules contends that the presence of dioxin in the 2,4-D waste drums did not influence the decision to incinerate. Hercules points to testimony by Dr. Phyllis Moore, Director of the ADPC & E, who made the initial decision to incinerate the drums, that the presence of dirt in the drums did not influence the decision to incinerate.[25] Hercules further argues that the placement of contaminated dirt into the drums would constitute a separate "disposal" of hazardous substances under CERCLA. Additionally, the redrumming efforts took place after August, 1976, when Hercules sold the plant to Vertac and therefore Hercules had nothing to do with the redrumming efforts.

None of these arguments withstand scrutiny. A number of witnesses, particularly from the State, testified about the rationale for incineration. There was no doubt that the drummed wastes presented a hazard to the area. EPA and the State of Arkansas were concerned that because of the manner in which the drums were stored, the risk of fire and explosion, as well as the possibility of tornadoes, could spread the dioxin

25. Dr. Moore testified that the issue of "dirt" did not influence the decision. 2001 Tr. at 279. However, she stated that the major concern with the drums was the presence of dioxin. 2001 Tr. at 282.

into the environment. Additionally, witnesses testified that because time was of the essence, testing a large number of the drums to determine whether dioxin was present would have been costly and time-consuming.[26] It was not, as Hercules argues, the dirt in the drums that drove the incineration; rather it was the dioxin in the dirt that drove the incineration of the drums.

Hercules also attacks the validity of the tests. The Court is not in a position to discredit the testing procedures or results. Witnesses from all parties maintained different positions with regard to the testing results. The Court cannot find as a matter of law that certain test results were not reliable.

Hercules advances other innovative arguments to support its contention that it did not cause some of the drums to be contaminated with dioxin. One of these is that the placement of the dirt into the drums is in itself a separate disposal.

"Disposal" under CERCLA has the same meaning as "disposal" under the Solid Waste Disposal Act. 42 U.S.C. § 9601(29) The Solid Waste Disposal Act defines " "disposal" as the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters." 42 U.S.C. § 6903(3). Hercules "disposed of" hazardous substances because it placed those hazardous substances in a manner that allowed

26. *See e.g.* 2001 Tr. at 542, 1787.

them to enter the environment. Attempts to further subdivide actions in an attempt to escape liability borders on the absurd.

Hercules also argues that it is relieved of liability under the doctrine of "superseding cause." Restatement (Second) of Torts, § 440. Comment b. It points to a number of actions taken which would relieve it of responsibility.

The Court cannot find that "superseding cause" is a basis for divisibility. The Restatement must be followed "only to the extent that it is compatible with the provisions of CERCLA." 247 F.3d at 717. Recognizing a "superseding cause" theory in this situation "would not be compatible" with the strict liability provisions of CERCLA. Even assuming the theory is applicable in CERCLA cases, it is not applicable here.

> The mere fact that other causes intervene between the original act of negligence and the injury for which recovery is sought is not sufficient to relieve the original actor of liability, if the injury is the natural and probable consequence of the original negligent act or omission and is such as might reasonably have been foreseen as probable. *Butler v. Arkansas Power & Light Co.*, 186 Ark. 611, 54 S.W.2d 984 [(1932)]; *Arkansas Power & Light Co. v. Marsh* [195 Ark. 1135, 115 S.W.2d 825 (1938)], *supra*; *Hayes v. Missouri Pac. R.R. Co.*, 208 Ark. 370, 186 S.W.2d 780 (1945). The original act or omission is not eliminated as a proximate cause by an intervening cause unless the latter is of itself sufficient to stand as the cause

> of the injury. *Butler v. Arkansas Power & Light Co., supra; Arkansas Power & Light Co. v. Marsh, supra.* The intervening cause must be such that the injury would not have been suffered except for the act, conduct or effect of the intervening agent totally independent of the acts or omission constituting the primary negligence.

Pollard v. Union Pacific R. Co., 75 Ark.App. 75, 79, 54 S.W.3d 559, 562-563 (Ark.App.2001)

Here, the Court cannot find that the harms associated with the drummed wastes, i.e., the contamination, would not have occurred except for the totally independent acts of EPA, the State of Arkansas, or Vertac.

"Moreover, the intervening act or omission of a third person is not a superseding cause when the original actor's negligent conduct is a substantial factor in bringing about an injury, if the actor, at the time of his negligent conduct, realized that a third person might so act or if the intervening act is a normal response to a situation created by the actor's conduct and the manner in which it is done is not extraordinarily negligent." *Ouachita Wilderness Institute, Inc. v. Mergen*, 329 Ark. 405, 415, 947 S.W.2d 780, 785 (Ark.1997) There is no evidence that any action of any other person or entity was "extraordinarily negligent" so as to relieve Hercules of liability.

Hercules has not demonstrated that the drums did not contain any hazardous substances that Hercules produced. Hercules cannot show that any of those hazardous substances

in the drums that were attributable to Hercules can be distinguished from the hazardous substances in the drums that were attributable to Vertac. There is evidence of cross contamination of equipment. Vertac and Hercules used the same equipment to make 2,4,-D and 2,4,5-T. Subsequent years of only 2,4,-D production did not rid the equipment of dioxin. Dioxin was present in the soils; contaminated soil was placed in the D-drums when they were overpacked. The soil, dust, shredded pallets, shredded trash and the process areas were permeated with TCDD, TCDF, 2,4-D, 2,4,5-T, 2,4,5-TP, chlorinated benzenes and other hazardous wastes. The drum overpacking process therefore added TCDD, TCDF and other hazardous substances into the 2,4-D waste drums. The inner drums continued to corrode, combining the contents of the inner drums with those used in the overpacking.

Hercules cannot establish that it was not responsible for the dioxin in the soil which was ultimately placed in the drums. Even Hercules' expert witnesses, Robert Fisher and Douglas Keilman, both of whom worked for Hercules could not say that the source of the dioxin in the "D" drums did not come from Hercules.[27]

The Court finds that Hercules has not provided any concrete and specific evidence that the hazardous substances in the drums were "distinct" such that Hercules should not be held responsible for the costs incurred with the incineration of the drummed wastes.

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27. 2001 Tr. at 907-908. *See also* testimony of Steven Quigley, an expert in environmental engineering for Uniroyal, who opined that there is no way to identify the source of the 2,3,7,8-TCDD in the D drums. 2001 Tr. at 1940.

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OU-1 (Above Ground Media)

Hercules argues that the Court must look to the remedies chosen and the situations which created the need for those remedies to determine whether the harm is divisible with respect to OU-1. Hercules divies up OU-1, declaring that it is responsible for some harm but not for other.[28] That is, the several different media should be characterized as "distinct" environmental harms.

Hercules contends that it cannot be held responsible for hazardous materials in the tanks, vessels and equipment. It claims that it removed all of its hazardous wastes when it completely disassembled and cleaned out all the plant equipment in 1971. Testimony at the hearing revealed that the cleanup of the equipment was not as thorough as portrayed by Hercules, and that all hazardous wastes were not removed.[29]

Furthermore, that Hercules cleaned the plant in 1971 is irrelevant, because Hercules is liable as an owner while it leased the plant to Transvaal. As an owner, it is responsible for the contamination attributable to Transvaal's operations. *See Nurad, Inc. v. William E. Hooper & Sons Co.*, 966 F.2d 837, 846 (4th Cir.1992) *cert. denied sub nom., Mumaw v. Nurad, Inc.*, 506 U.S. 940, 113 S.Ct. 377, 121 L.Ed.2d 288 (1992)(§ 9607(a)(2) imposes liability on owner of facility at time disposal of hazardous waste); *United States v. R.W.*

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28. It accepts responsibility for the costs related to the spent carbon.

29. *See* testimony of Reedie Ray, a former Hercules plant worker who was involved in the plant cleaning process. 2001 Tr. at 1369.

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Meyer, Inc., 889 F.2d 1497, 1507 (6th Cir.1989), *cert. denied*, 494 U.S. 1057, 110 S.Ct. 1527, 108 L.Ed.2d 767 (1990).

In addition to its argument concerning the 1971 plant cleanup, Hercules relies on its "flushing theory" to establish that the hazardous substances found in the equipment were not its own. As discussed above, the theory is not valid. That 2,4,5-T and dioxin were found in the equipment after 8 years of just 2,4-D production disproves Hercules' theory.

Similarly, Hercules cannot establish that it was not the source of the contamination on the shredded trash and pallets. The pallets, which were used to store drummed wastes at the site, became contaminated with the 2,4,5-T, 2,4-D and dioxin leaked from the drums.[30] The pallets also became contaminated because they were in contact with the contaminated soil.

Hercules also contaminated the buildings. Dioxin was found in leachate from the buildings.[31] Wipe samples from the buildings in OU-1 revealed reportable quantities of dioxin. Dioxin was found in storage vessels.[32] The 1974 Sputnik eruption contaminated nearby buildings.

Hercules contends that the threat posed by the plant buildings was the threat of collapse, as well as asbestos contained in some building materials. Hercules argues that it did not cause these threats. Vertac, in abandoning the plant

30. *See* exhibit 1149.

31. 2001 Tr. at 1771.

32. *See* Exhibits 1149 and 1150.

and letting it fall into disrepair, was responsible for the possibility of building collapse. The United States was responsible for asbestos being in the buildings when it built them to house the Arkansas Ordnance Plant.

Hercules is wrong. Asbestos was not the cause for the remediation. The buildings were demolished because the risk of collapse might cause release and human exposure to herbicide process contamination, including unacceptable levels of TCDD.

In sum, Hercules has not presented evidence to demonstrate that it was not the source of the 2,4,5-T and dioxin in the above-ground media, and therefore it is responsible for the costs incurred with regard to OU-1.

OU-2 (Soils, Foundations and Underground Utilities)

Hercules argues that the harm at OU-2 can be characterized as "successive." Hercules contends that the principles of *Bell Petroleum* apply with regard to OU-2. According to Hercules, dioxin, a single harm, drove the remedy. Synergistic effects, relative toxicity or differential migratory potential are not factors. The contribution of each harm can be reasonably estimated based on the production volume of 2,4,5-T and 2,4,5-TP. Hercules would apportion harm based on the production records of the 2,4,5-T and 2,4,5-TP that Hercules and Vertac produced during the years each of them owned the plant.

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According to the OU-2 Record of Decision ("ROD"), extensive dioxin contamination was found in soils in the blowout area, the east drum storage area, around and to the east of the broiler house, in the area of the existing and former chlorination plants, and around the maintenance area. Other contaminants of concern such as chlorophehols, chlorobenzenes and chlorophenoxyacids were also found throughout the Site soils, in relative concentrations paralleling dioxin concentrations.[33]

"Where, as in this case, hazardous substances are commingled, a defendant cannot rely on merely volumetric evidence. Evidence must be produced 'disclosing the individual and interactive qualities of the substances deposited' at the Site." *United States v. Vertac*, 966 F.Supp. 1491, 1504 (E.D.Ark.1997) (quoting *United States v. Monsanto Co.*, 858 F.2d 160, 172 (4th Cir.1988), *cert. denied*, 490 U.S. 1106, 109 S.Ct. 3156, 104 L.Ed.2d 1019 (i989)). Additionally, proof of "relative toxicity, migratory potential, degree of migration and synergistic capacity" of the hazardous substances at the Site is relevant to the divisibility of harm inquiry. *United States v. Alcan Aluminum Corp.*, 315 F.3d 179, 186 (2d Cir.2003) (citation omitted) "[T]he volume of waste of a particular generator is not an accurate predictor of the risk associated with the waste because the toxicity or migratory potential of a particular hazardous substance generally varies independently of the volume . . ." *United States v. Chem-Dyne Corp.*, 572 F.Supp. 802, 811 (S.D.Ohio 1983).

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33. *See* ROD for OU# 2, Exhibit 6815, p. 30-35.

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EPA contends that the Hercules has failed co present accurate production records. Hercules counters that exact numbers are not necessary; estimates suffice if they form a reasonable basis for apportioning the harm. "If the expert testimony and other evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability, joint and several liability should not be imposed in the absence of exceptional circumstances." *Bell Petroleum*, 3 F.3d at 903.

EPA asserts that Hercules' reliance on sales records does not establish a reasonable basis for dividing the harm. Estimates of production were made because some of the production records were lost. Unlike the pure volumetric approach in *Bell*, the sales records fail to adequately account for all the production. They do not account for product made and not sold, off-spec material disposed of at the Site, or for operational and waste disposal differences.

The volumetric approach presupposes that leaks and spills took place at roughly the same amount and same frequency and severity during the production of 2,4,5-T and 2,4,5-TP. Douglas Keilman, Hercules' project manager involved in the remediation and an expert witness for Hercules, conceded that in order to use volumetric evidence, he had to assume that the release of hazardous substances was constant over time.[34] If that assumption is correct, then, according to Hercules, the amount of dioxin contributed to the soils would be roughly proportionate to the production volume. Based on its calculations, Hercules contends that it is responsible for 70.74% of EPA's response costs for OU-2.

34. 2001 Tr. at 1323-24.

The evidence, however, does not support the assumption on which Hercules relies. There is no way to quantify the releases of wastes at the Site with production volumes, and there was not a constant ratio or direct correlation between the two. Leaks and spills occurred regularly during the years Hercules owned the Site. Production methods differed over the years, resulting in differences in the amount of waste generated. Until 1966, Hercules operated a blower or dryer at the acid plant that spewed dioxin-bearing flaked acid material around the Site. Thus, according to EPA, more TCDD would have been in the waste than in the product after Hercules installed the toluene wash process. The DOD changed the specifications for the formulation of Agent Orange during the time it was produced, precluding the assumption that the ratio of waste to production volume remained constant. The concentration of active ingredients in the DOD product was different than that in the commercial product. Additionally, waste disposal methods differed, with some methods producing more contamination than others.[35]

The sputnik eruptions reveal the difficulty in relying on volumetrics as a basis for divisibility of harm, and point to

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35. For example, Hercules used a "tee-pee" burner to dispose of its filter paper and cardboard drums that were contaminated with hazardous substances. The tee-pee burner was essentially a device for open burning. It was a large metal structure with a screen on the top, about 30 to 40 feet tall. 2001 Tr. at 143, 740. The filter paper was coated with 2,4,5-T, 2,4-D, as well as other chlorinated hydrocarbons. 2001Tr. at. 345-46. The cardboard drums contained TCB, a chlorinated hydrocarbon which may produce dioxins when burned. The release of hazardous substances into the air resulting from the burning may have caused an unknown amount of dioxin contamination at the Site. Vertac did not burn any wastes on the Site.

the conclusion that production is not directly correlated to the release of waste. The evidence reveals that there were as many as twenty sputnik eruptions at the Site while Hercules owned the plant, and another ten when it leased the plant to Transvaal. The eruptions spread dioxin over the Site and Off-Site areas. The worst eruption occurred in 1974 when Transvaal leased the Site from Hercules.[36]

Here there were differences in the operations, as well as the generation and disposal of wastes, making this situation unlike that in *Bell Petroleum*, where there was only one media and one manner of disposal. There is no evidence in this case that the generation of waste was proportional to the production of product.

The manufacturing process at the Site yielded hazardous substances other than dioxin. Hercules has provided no evidence regarding the effect of these other substances on the migration or transport of dioxin. It has presented no evidence regarding the relationship between the volume of dioxin or other hazardous substances generated, the release of dioxin or other hazardous substances, and the harm at the Site.

Hercules did not present evidence of the relative toxicity, migratory potential and degree of migration, and synergistic effects or capacities of the various hazardous substances deposited at the Site. It contends they are irrelevant as the decision to remediate was based solely on dioxin. Thus, these factors did not come into play in the selection and implementation of remedies.

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36. 2001 Tr. at 885. The most serious process upset was the 1974 sputnik eruption in terms of generation of dioxin.

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Hercules' argument essentially places the burden on EPA to prove it considered the "synergistic effects" and that its failure to include mention of it in the ROD means that there is no need for Hercules to present evidence. While EPA may not have referred to synergistic effects of various contaminants, it did consider the various hazardous substances present at the Site, not relying solely on dioxin.

As the court cautioned in *Monsanto*, "[v]olumetric contributions provide a reasonable basis of apportioning liability *only if* it can be reasonably assume, or it has been demonstrated, that independent factors had no substantial effect on the harm to the environment." *United States v. Monsanto Co.*, 858 F.2d 160, 173 n. 27 (4th Cir.1988) (emphasis added). Hercules has not demonstrated that independent factors had no substantial effect on the harm.

For example, according to the testimony at the hearing, the half-life of dioxin is affected by different conditions.[37] Hercules did not present any evidence as to the rate the dioxin broke down at the Site and Off-Site areas based on photolysis, dissipation and other factors. It did not present any evidence of possible synergistic effects of the combinations of dioxin with other toxic materials, such as 2,4-D and 2,4,5-T. In sum, the Court finds that Hercules has not established a basis to divide the harm at OU-2.

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37. 2001 Tr. at 1195.

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Off-Site Areas

The Off-Site areas include soils, the floodplains and stream sediments of Rocky Branch Creek and Bayou Meto, sanitary sewer lines, and two municipal sewer plants and their structures. Hercules posits that the Off-Site environmental harm can be characterized as "successive." As with OU-2, Hercules states that because the remedy was based entirely on the presence of dioxin, the synergistic effects, relative toxicity, and differential migratory potential were not factors. Hercules argues that the production volumes of Hercules and Vertac for 2,4,5-T and 2,4,5-TP are a basis to find divisibility of harm. Hercules further contends that because Hercules and Vertac never owned or operated these off-site areas, their respective liabilities can only be as an "arranger."

That Hercules did not own the off-site areas does not mean that it can only be held liable as an "arranger." CERCLA defines "facility" broadly to include:

> (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or
>
> (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

42 U.S.C. § 9601(9). The Plant Site and Off-Site areas are not distinct facilities, but are one facility for purposes of liability under CERCLA.

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The definition of facility "applies not only to traditional waste sites . . . but also to any 'area' in and around which hazardous substances have 'come to be located . . . '" *Axel Johnson, Inc. v. Carroll Carolina Oil Co., Inc.*, 191 F.3d 409, 417 (4th Cir.1999) (citations and internal quotations omitted).

The Tenth Circuit recently reviewed how federal courts have interpreted "facility" under CERCLA, finding that

> the circuits that have applied the defined term "facility" have done so with a broad brush. *See Uniroyal Chem. Co.*, 160 F.3d at 245 (applying broad definition of facility in an action under § 107 and stating "[i]n examining the contours of § 9601(9), it is apparent that facility is defined in the broadest possible terms, encompassing far more than traditional waste sites. It expressly includes buildings, pipelines, motor vehicles, rolling stock, wells, and aircraft. 42 U.S.C. § 9601(9)(A).") (emphasis supplied); *United States v. Rohm and Haas Co.*, 2 F.3d 1265, 1279 (3d Cir.1993) (examining liability under § 107 and noting "we think it evident from the broad statutory definition of 'facility' that Congress did not intend EPA to be straight-jacketed in this manner in situations involving a release transcending property boundaries"); *3550 Stevens Creek Assocs. v. Barclays Bank of Cal.*, 915 F.2d 1355, 1360 n. 10 (9th Cir.1990) (determining liability under § 107 and noting broad construction of the term "facility," "such that in order to show that an area is a 'facility,' the plaintiff need only

> show that a hazardous substance under CERCLA is placed there or has otherwise come to be located there") (internal citations omitted); *New York v. Shore Realty Corp.*, 759 F.2d 1032, 1043 n. 15 (2d Cir.1985) ("CERCLA defines the term 'facility' broadly to include any property at which hazardous substances have come to be located"); *see also Quaker State Minit-Lube, Inc. v. Fireman's Fund Ins. Co.*, 52 F.3d 1522, 1525 (10th Cir.1995) (In a § 9607 action, "[t]he EPA designated the Ekotek Site [consisting of three surface impoundments, piles and pits of waste material, underground tanks, and an underground drain field] a CERCLA facility pursuant to 42 U.S.C. § 9601(9) because of contamination by hazardous substances.") (emphasis supplied).

In a § 107 action, the Fourth Circuit noted that simply because "a property could be divided [into multiple facilities] does not, however, mean that it must be so divided for CERCLA purposes." *Axel Johnson, Inc. v. Carroll Carolina Oil Co.*, 191 F.3d 409, 418 (4th Cir.1999). There, the hazardous substances were not located only in the storage tanks and their associated spill areas; rather, they were located throughout the property. The court, after noting the "untenability of the contention that anything that could be designated as a separate facility must be so designated," applied the broad definition of facility, and noted that "[n]o court has held . . . that any area that could qualify as a facility under the definition must be considered a separate facility." *Id.* at 417-18 (emphasis supplied); *see also Tyson*, 299 F.Supp.2d at 709 (treating plant or "an area [that] is managed as a whole . . . [as] a single facility for CERCLA purposes").

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We recognize that in a § 107 action, the hazardous substances may have contaminated large parts of a plant, while initially being emitted from only one tank. *See Axel Johnson*, 191 F.3d at 417. However, the underlying purpose of § 103, that is, the alerting of government officials of a potential hazardous substance release that may require federal and local government response assistance, is best served through treating the Dorman Farm as a single facility. Solely owned by Seaboard, it is managed and operated as one facility, with one particular site purpose (producing swine products). *See also Akzo Coatings, Inc. v. Aigner Corp.*, 960 F.Supp. 1354, 1359 (N.D.Ind.1996) (rejecting the argument that each contamination source is a separate facility because such argument "could have disastrous consequences, for ultimately every separate instance of contamination, down to each separate barrel of hazardous waste, could feasibly be construed to constitute a separate CERCLA facility"), *aff'd in part, vacated in part by*, 197 F.3d 302 (7th Cir.1999); *Quaker State Minit-Lube*, 52 F.3d at 1525 (10th Cir.1995) (entire site, which consisted of surface impoundments, piles and pits of waste material, underground tanks, and an underground drain field considered a facility for § 9607); *Cytec Indus. v. B.F. Goodrich Co.*, 232 F.Supp.2d 821, 836 (S.D.Ohio 2002) ("This court concludes that usually, although perhaps not always, the definition of facility will be the entire site or area, including single or contiguous

properties, where hazardous wastes have been deposited as part of the same operation or management."); *Clear Lake Props. v. Rockwell Int'l Corp.*, 959 F.Supp. 763, 767-68 (S.D.Tex.1997) (rejecting an attempt to create unnatural boundaries between a building and the site on which it is located).

Sierra Club v. Seaboard Farms Inc., 387 F.3d 1167, 1174-1175 (10th Cir.2004) (finding that farm complex as a whole, as opposed to every barn, lagoon and land application area on complex, constituted single "facility" under CERCLA)

In this case, the contamination from the Site migrated to the contiguous off-site areas. Hercules contributed to the contamination of the off-site areas when it operated the Plant Site from 1961 to 1971 and when it leased the Plant Site to Transvaal from 1971 to 1976, during which time Transvaal's operations further contaminated the Plant Site and Off-Site Areas. Therefore, Hercules is liable as an owner under section 107(a)(2) for contamination in the Off-Site Areas.

The Court has already discussed the flaws with applying a volumetrics approach to the divisibility of harm with regard to OU-2. The same analysis applies to the Off-Site areas. The Court cannot find that the harm at the Off-Site areas is divisible based on production volumes.

OU-3 (Groundwater)

Hercules states that it did not cause the groundwater contamination which resulted from Vertac's ownership and operation of the Site after August, 1976. Hercules contends that

the response costs associated with the remediation of groundwater contamination are divisible as a successive harm. Generalized organic compounds drove the remedy and, according to Hercules, the costs can be apportioned based on volumetrics because there are no synergistic or interactive effects of the chemicals of concern, i.e., organics, upon each other. That is, the amount of organic chemicals generated in the production process, which would have been the source of contamination of the groundwater, would have been proportional to total production volume of all products, not just 2,4,5-T and 2,4,5-TP. Furthermore, Hercules contends that the manufacturing processes did not change materially over the time that Hercules and Vertac operated the plant. Here, Hercules posits that the Court should use total production volume to determine the amount of harm caused by Hercules.

The flaws associated with Hercules' volumetrics approach discussed above apply equally to its argument with respect to groundwater contamination. Furthermore, the evidence supports a finding that Hercules disproportionately contaminated the groundwater. There is no dispute that thousands of drums of 2,4-D and 2,4,5-T were buried on site during the time Hercules owned the Site. The burying of such wastes in unlined pits contributed to the groundwater contamination at the Site.

Furthermore, when Hercules operated the Site, waste was poured into a well, resulting in contamination of the groundwater.[38] Hercules is liable for the contamination of the groundwater, not only as a result of its practices, but those of Transvaal. "[G]round water contamination at the site is complex, resulting from past water management and disposal

38. 2001 Tr. at 1968-69.

practices. Sources of contamination include on-site landfills, spills and discharges into the central ditch, Reasor Hill well, and other parts of the central process area."[39] The dioxin spewed from the sputnik eruption in 1974 contaminated the groundwater.[40] Sputnik waste which was probably contaminated with dioxin was dumped in the marshy area adjacent to the Boiler House.[41] Furthermore, the record establishes that Hercules' operations contaminated other areas encompassed by OU-3, such as the process area and soils, including areas on the east side of the central ditch.

Hercules tries to distinguish the drum burial areas from OU-3. Such an attempt is without merit. It admitted that it was liable for ground water contamination. Hercules buried drums containing hazardous wastes on site. The OU-3 remedial includes the burial areas and Hercules is responsible for the contamination resulting from the burial of the drums.[42]

The contaminants of concern in the ground water were released and disposed by Reasor-Hill, Hercules and Transvaal/Vertac. Hercules has not produced any specific evidence upon which to divide the harm.

Landfills

As Hercules never owned or operated the two landfills, its liability arises as an arranger for the disposal of hazardous

39. Exhibit 6854, ROD for OU# 3, at p. 31.

40. *See* Exhibit 7513 at p. 124.

41. 2001 Tr. at 1245.

42. *See* Exhibit 6854, ROD for Operable Unit # 3.

substances at the landfills. Hercules argues that there is no evidence that it ever disposed of CERCLA hazardous waste at the landfills.

Rogers Road Landfill

The Rogers Road Landfill is a ten-acre tract that the City of Jacksonville acquired on September 16, 1953. Hercules contends that it did not send any of its waste, garbage or trash to the Rogers Road Landfill because it was closed during the years that Hercules operated the plant. Hercules states that the Rogers Road Landfill was opened from 1953 until 1959, closed between 1959 and 1973, and then reopened for a brief period from 1973-1974. The exact dates that the landfill was open are unclear; the Eighth Circuit in *O'Dell v. Hercules, Inc.*, 904 F.2d 1194, 1197 (8th Cir.1990) found that "[t]he Rogers Road landfill had been closed by the city of Jacksonville in 1959. However, unofficial dumping occurred at Rogers Road."[43]

Fifteen to 50 drums of dioxin contaminated waste were disposed of at the landfill. They were not labeled and were very corroded.[44] Hazardous substances identical to those generated by Hercules at the Site were found at the landfill,

43. *See also* Exhibit 8099, Technical Assistance: Rogers Road Landfill. "From 1953 until 1974, approximately one-half of the site was used intermittently as a municipal waste disposal facility and an open dump." *But see* 2001 Tr. at 349, deposition testimony of Stephen Veale, remedial project manager for EPA, who stated that Rogers Road was opened from 1953 to 1959, closed from 1959 to 1973 and then open again in 1973 to 1974.

44. Exhibit 6895, ROD for Rogers Road Landfill, pg. 1-4.

including 2,3,7,8-TCDD, 2,4-D, 2,4,5-T, and 2,4,5-TP.[45] In addition, Dieldrin, an herbicide produced by Reasor-Hill, was found.

EPA in the ROD concluded that no detailed records were found to prove how the contaminants of concern were placed at the landfill.[46] To establish Hercules' liability for harm at the Rogers Road landfill, EPA relies on the testimony of Alsie Glover, who lived next door to the Rogers Road landfill and in between it and the Graham Road landfill. She testified in the *O'Dell-Bridges* trial that the Rogers Road Landfill was opened from 1961 to 1967 and accessible during the years Hercules operated its Jacksonville Plant.[47] She saw barrels at the Rogers Road dump with the name "Hercules Manufacturing Company."[48] Photographs of the drums at the landfill reveals no such labels or markings. The ROD states that there were no discernable markings on the drums.[49]

Vincent Dodson, who worked for Hercules from the summer of 1967 through 1969, testified in the *O'Dell-Bridges* trial that the 55-gallon barrels he took to the Graham Road landfill did not have Hercules' name or logo.[50] Duane Reel,

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45. *Id.* at 1-32.

46. AR001821.

47. 2001 Tr. at 165.

48. 2001 Tr. at 171.

49. Exhibit 6895, p. 1-4.

50. Testimony of Vincent Dodson, *O'Dell-Bridges* trial, Feb. 16, 1988, p. 277.

who was city engineer for the City of Jacksonville during the time of the remediation, testified that the drums he observed at the landfill did not have any labels on them.[51] Martin Swanson, a remedial project manager for the Jacksonville Site, testified that there were no marking on the drums at the Rogers Road landfill and that there were no materials at the landfill that had Hercules markings on them.[52] Billy Roberts began working for Reasor-Hill in 1954, and worked almost continuously at the Site for 48 years.[53] He stated that Reasor-Hill disposed of its filter paper at the landfill. He recalled going to Rogers Road once and to the Jacksonville landfill twice for Reasor-Hill. He could not state definitely that he ever went to Rogers Road for Hercules.[54]

Also supporting Hercules' position that it did not dispose of wastes at Rogers Road is the presence of dieldrin. Dieldrin was produced by Reasor-Hill, who operated the Site during the time the Rogers Road landfill was opened. EPA states that Hercules may have disposed of some of the Dieldrin wastes that had been left by Reasor-Hill when Hercules purchased the plant. This, of course, is speculation. It is equally, if not more plausible, based on the testimony of Billy Roberts, that Reasor-Hill disposed of the chemical wastes at the landfill.

The Court also notes that the residents around the landfills used empty barrels for their personal use, such as

51. 2001 Tr. at 151.

52. 2001 Tr. at 1524.

53. 2001 Tr. at 2050.

54. 2001 Tr. at 2054-55.

for burning trash or for barbecue grills. They also used the landfill to dump their wastes. It is quite possible that the barrels could have been placed in the landfill by the residents.[55]

The Court finds that Hercules has met its burden of establishing that it is not responsible for the harm caused at the Rogers Road landfill. Thus, Hercules will not be responsible for the costs incurred by the government with respect to the Rogers Road landfill.

Jacksonville Landfill (also known as the Graham Road Landfill or City Dump)

The Jacksonville Municipal Landfill Superfund Site is an eight-acre plot purchased by the City of Jacksonville in June, 1960. The landfill has been referred to as the Jacksonville Landfill, the Graham Road Landfill, the Graham Road Dump and the Jacksonville City Dump. About forty of the eighty acres were used by the City for landfilling until the landfill was closed in 1973.[56]

Between 15 and 50 drums were disposed of in an area referred to as the "drum disposal area," located behind the pipeline on the south end of the landfill property. "Most of the drums have corroded completely away, leaving piles of white, fibrous, adsorbent-type materials."[57] The contaminants

55. 2001 Tr. at 66-67, 191-194.

56. AR002384.

57. AR002389.

of concern that were detected were 2,3,7,8-TCDD, 2,4-D, 2,4,5-T, 2,4,5-TP and 2,4-DCP.[58]

Hercules admits that it took some waste to the Graham Road Landfill. However, Hercules states that the trash that was taken did not contain hazardous substances. Thus, Hercules contends that it was not responsible for the presence of the hazardous substances, particularly the filter paper in which the chemicals of concern were found, at the Jacksonville Landfill.

The Court need not dwell long on Hercules' argument. The record is replete with testimony of Hercules' employees who took chemical wastes to the "city dump." Vincent Dodson, who worked for Hercules in the late 1960s, testified that chemical wastes, including those that came from leaks and spills and the Sputnik explosions, were scooped up, placed in barrels and dumped at the Jacksonville landfill[59] Doyce Shurley, who worked for Hercules in the early 1960s, remembered going to the Jacksonville Landfill two or three times for Hercules to dispose of trash. He believed that he once disposed of a barrel of toluene stillbottoms.[60] Billy Honey also testified that when he worked for Hercules he hauled drums which contained chemical waste to the Graham Road landfill.[61] Similarly, LeRoy Jordan confirmed that he

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58. AR002396-97.

59. 2001 Tr. at 55, 70.

60. 2001 Tr. at 212.

61. 2001 Tr. at 144, 146-147.

disposed of both liquid and solid waste barrels at the Graham Road site for Hercules.[62]

That the drums only contained filter paper, as Hercules contends, does not absolve Hercules of arranging for the disposal of hazardous substances. Filter paper was used in the manufacture of 2,4-D, 2,4,5-T, and 2,4,5-TP and Hercules used it in its product formulation. Filter paper was caked with various wastes including TCDD.

Hercules also relies on "geographic considerations" as a basis for limiting its harm. In *United States v. Township of Brighton*, 153 F.3d 307, 320 (6th Cir.1998), the court stated that if the Township "could show that its 'operating' activities were completely limited to a discrete and measurable section of the property, and that the releases onto or from that section represented a discrete and measurable harm, this would provide a reasonable basis for apportionment."

The non-contiguous areas, according to Hercules, are the north and south sides of the Jacksonville landfill, areas which were divided by a natural gas pipeline and opened for use at different times. It contends that it only deposited waste on the north side of the landfill, and it is therefore not responsible for the response costs associated with the waste on the south side of the landfill.

EPA presented a photograph of the Jacksonville Landfill dated July 1969 showing that there was waste disposal south

62. 2001 Tr. at 200-202.

of the pipeline right-of-way as of 1969.[63] Vincent Dodson testified that he disposed of wastes south of the pipeline.

Hercules cannot show that the trash, filter paper, and other materials disposed of at the Jacksonville landfill were not contaminated with hazardous substances, including dioxin, 2,4,5-T and 2,4-D. It also cannot demonstrate that it is not the source of the contamination at the Jacksonville City landfill. Thus, the Court finds that Hercules has not established a basis to divide the harm at the Jacksonville City landfill.

Constitutionality of CERCLA

Hercules contends that the retroactive application of CERCLA to impose liability of $82 million upon Hercules with respect to the drummed wastes and OU-1 violates the Fifth Amendment under *Eastern Enterprises v. Apfel*, 524 U.S. 498, 118 S.Ct. 2131, 141 L.Ed.2d 451 (1998) because that liability is severe, unexpected, and grossly disproportionate to Hercules' conduct. Hercules' arguments rest on the assumption that it is not responsible for the disposal of Vertac's drums and OU-1, and that it has shown divisibility.[64]

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63. Ex. 8097, 2001 Tr. at 1610-12.

64. Hercules arrives at a somewhat outrageous conclusion that the Eighth Circuit, in remanding the case, had "clearly signaled its belief that the evidence supports only Hercules' contentions regarding its lack of liability for the drums and OU-1. As a matter of deference to the factfinder, however, the Eighth Circuit remanded so that this Court could take the step of entering judgment in favor of Hercules." (Reply by Hercules in support of findings of fact and conclusions of law, docket entry 2488, p. 34 fn. 20). It is clear that the reversal and remand hardly amounts to a finding by the Eighth Circuit in favor of Hercules.

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The Eighth Circuit has previously held CERCLA to be constitutional. *See United States v. Northeastern Pharm. and Chem. Co.*, 810 F.2d 726 (8th Cir.1986). It reaffirmed this holding and refused to accord *Eastern Enterprises* precedential value. *United States v. Dico, Inc.*, 266 F.3d 864, 879-880 (8th Cir.2001)

Recently, the Second Circuit addressed the argument that the retroactive application of CERCLA to an aluminum manufacturer's waste disposal activities constituted an unconstitutional taking under the Fifth Amendment's Takings Clause and a violation of the Fourteenth Amendment's Due Process Clause. The court thoroughly discussed the issue, noting that the other courts that have considered the constitutionality of CERCLA in light of *Eastern Enterprises* have continued to hold that CERCLA is constitutional. *United States v. Alcan Aluminum Corp.*, 315 F.3d 179, 189-190 (2d Cir.2003)(listing cases).

"[C]ourts considering the issue prior to the *Eastern Enterprises* decision consistently agreed that the retroactive liability scheme of CERCLA is constitutional. Like this Court, several other courts have been asked to reconsider this precedent in light of Eastern Enterprises. Those courts have uniformly held that CERCLA continues to pass constitutional muster." *Id.* at 189.

Hercules has not provided a basis for the Court to disregard the well-reasoned decisions of those courts that have considered the constitutionality of CERCLA post-*Eastern Enterprises.* The Court finds that the application of CERCLA to hold Hercules liable in this instance is not unconstitutional.

Appendix B

Uniroyal's Divisibility Defense

Uniroyal asks that the Court reconsider Uniroyal's divisibility defense. Uniroyal contends that if the Court accepts Hercules' divisibility argument but rejects Uniroyal's divisibility argument, liability for the divided portion of the harm will fall to Uniroyal alone.

Uniroyal did not raise the divisibility defense on appeal and the Court was not directed by the Eighth Circuit to consider it. The Court will not go outside the scope of the remand. Even if it did, the Court would find no basis to reconsider Uniroyal's divisibility of harm defense. As discussed above, the Court has rejected Hercules' divisibility argument with respect to those areas for which Uniroyal was held jointly and severally liable. The Court could not find, therefore, that Uniroyal has established a basis to divide the harm. It remains jointly and severally liable for all areas except the landfills.

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CONCLUSION

The Court has considered Hercules' divisibility of harm defense according to the standards set forth in *Vertac XII*. The Court finds that Hercules has failed to establish a basis to divide the harm with the exception of the Rogers Road landfill. The Court finds that Hercules is not responsible for the costs incurred in connection with the Rogers Road landfill.

The Court has already found that the costs incurred by EPA were reasonable and that it was entitled to recover those costs. The Court entered judgment against the parties in the amount of $102,878,641.35 plus any additional response costs incurred and to be incurred in this case. *Vertac IX*, at 787. The Court need not revisit its findings with regard to the reasonableness of the costs. Those findings remain valid. The judgment, however, must be reduced by the amount of costs incurred for the Rogers Road landfill.

The Court further finds that the previous ruling regarding allocation remains valid. Thus, the previous finding that Uniroyal is responsible for 2.6 percent of the costs for which it is jointly and severally liable is affirmed. *See United States v. Vertac Chem. Corp.*, 79 F.Supp.2d 1034, 1041 (E.D.Ark.1999).

The government is directed to submit a proposed judgment within fifteen days of this Memorandum Opinion and Order which sets forth the modified costs consistent with this Order.

APPENDIX C — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT FILED APRIL 10, 2001

UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

Nos. 99-3684, 99-3685, 00-1473.

Submitted: June 12, 2000.

Filed: April 10, 2001.

UNITED STATES of America; Arkansas Department of Pollution Control and Ecology,

Plaintiffs/Appellees,

v.

HERCULES, INC.,

Defendant/Appellant,

Vertac Chemical Corporation; Department of Defense; Dow Chemical Corporation,

Defendants,

Uniroyal Chemical Limited, formerly known as Uniroyal Limited,[1]

Defendant/Appellee,

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1. As of January 30, 2001, the name of this entity was changed to Crompton Co./Cie.

Appendix C

Velsicol Chemical Corporation; John Does, 1-5,

Defendants.

Washington Legal Foundation; John Doull, Ph.D., M.D.; Karl K. Rozman, Ph.D.; William J. Waddell, M.D.; K. Roger Hornbrook, Ph.D.; Daniel M. Byrd, III, Ph.D., D.A.B.T.; Robert Golden, Ph.D.; B. Frank Vincent, Ph.D.; International Society of Regulatory Toxicology and Pharmacology; American Council on Science and Health; The Allied Educational Foundation; Frank B. Cross; Michael R. Fox, Ph.D.; Gary E. Marchant, Amici on behalf of Appellant.

United States of America; Arkansas Department of Pollution Control and Ecology,

Plaintiffs/Appellees,

v.

Hercules, Inc.,

Defendant/Appellee,

Vertac Chemical Corporation; Department of Defense; Dow Chemical Corporation,

Defendants,

Uniroyal Chemical Limited, formerly known as Uniroyal Limited,

Defendant/Appellant,

Appendix C

Velsicol Chemical Corporation; John Does, 1-5,

Defendants.

Arkansas Department Of Pollution Control And Ecology,

Plaintiff/Appellee,

v.

Vertac Chemical Corporation; Hercules, Inc.,
a Corporation,

Defendants.

Washington Legal Foundation; John Doull, Ph.D., M.D.; Karl K. Rozman, Ph.D.; William J. Waddell, M.D.; K. Roger Hornbrook, Ph.D.; Daniel M. Byrd, III, Ph.D., D.A.B.T.; Robert Golden, Ph.D.; B. Frank Vincent, Ph.D.; International Society of Regulatory Toxicology and Pharmacology; American Council on Science and Health; The Allied Educational Foundation; Frank B. Cross; Michael R. Fox, Ph.D.; Gary E. Marchant, Amici on behalf of Appellant,

United States of America,

Plaintiff/Appellee,

Vertac Chemical Corporation,

Defendant,

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Hercules, Inc.,

Defendant/Appellee,

Dow Chemical Corporation,

Defendant,

Uniroyal Chemical Limited, formerly known as Uniroyal Limited,

Defendant/Appellant.

United States of America; Arkansas Department of Pollution Control and Ecology,

Plaintiffs,

Hercules, Inc.,

Defendant/Appellant,

Vertac Chemical Corporation; Department of Defense; Dow Chemical Corporation,

Defendants,

Uniroyal Chemical Limited, formerly known as Uniroyal Limited,

Defendant/Appellee,

Velsicol Chemical Corporation; John Does, 1-5,

Defendants.

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WOLLMAN, Chief Judge.

Hercules, Inc. (Hercules) and Uniroyal Chemical Co. (Uniroyal) raise various claims arising from a series of decisions made by the district court over the past decade finding them jointly and severally liable to the United States for environmental cleanup costs and allocating such costs between them pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § § 9601-9675 (1995 & Supp.2000), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub.L. No. 99-499, 11 Stat. 1613. We affirm in part and reverse and remand in part.

I. BACKGROUND

A. Factual History

This case involves the Vertac Chemical Plant site, a ninety-three acre tract of land in Jacksonville, Arkansas (the Jacksonville site or the site), that was originally developed by the federal government in the 1930s as a munitions factory. In the late 1940s the site was sold to a now-defunct company called Reasor-Hill Corporation (Reasor-Hill), which at first manufactured various pesticides but in 1958 began to make herbicides including dichlorophenoxyacetic acid (2,4-D) and trichlorophenoxyacetic acid (2,4,5-T), synthetic hormones that kill weeds or brush by accelerating growth to the point of natural death. Although these herbicides rapidly biodegrade into harmless substances, the manufacture of 2,4,5-T (but not of 2,4-D) creates a byproduct, 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin), that is now viewed as

hazardous to humans. While Reasor-Hill operated the site, an unknown quantity of these and other untreated chemical wastes from the production process flowed through cooling ponds on the west side of the plant into a nearby stream. Other wastes were stored in numerous drums stacked in a field on the site.

Hercules bought the site from Reasor-Hill in 1961 and continued to manufacture herbicides, including 2,4-D and 2,4,5-T, at the plant until 1971. During this period Hercules sold the bulk of its product to the United States Department of Defense as the defoliant Agent Orange, a herbicide used in Vietnam to clear jungle undergrowth.[2] Soon after Hercules took over the site it buried the deteriorating drums of chemical waste left by Reasor-Hill in unlined trenches on the site. Hercules did not learn of the toxicity of dioxin until March of 1965, when a scientific study found that it could cause chloracne, a particularly persistent and disfiguring form of acne that typically affects the face, neck, and shoulders. Dioxin was subsequently linked to cancer.

Later in 1965, Hercules instituted a "toluene extraction" process designed to remove organic impurities from 2,4,5-T products. This process yielded residue ("stillbottoms") containing extremely high levels of dioxin. Hercules placed this residue in drums, some of which it buried at the site and some of which it disposed of at two nearby landfills. Although Hercules has acknowledged numerous leaks and spills during its operation of the site, the record indicates that Hercules

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2. Agent Orange is made from a mixture of 2,4-D and 2,4,5-T. *O'Dell v. Hercules, Inc.*, 904 F.2d 1194, 1197 n. 6 (8th Cir.1990).

generally improved the safety and cleanliness of the site and complied with environmental regulations between 1961 and 1971.

In 1971, Hercules ceased production at the site and leased the facility to Transvaal, Inc., which later became Vertac Chemical Corp. (Vertac). When Hercules ceased operations at the cite, it cleaned out all of its equipment and production vessels, buried its waste, and shipped empty drums off-site.

Initially, Vertac continued the production of 2,4-D and 2,4,5-T and followed Hercules's practice of burying most of the waste. In 1975, however, Vertac began shipping its 2,4-D waste to off-site landfills and began to store its 2,4,5-T stillbottoms above ground at the site with the hope that the waste might someday be recycled. In 1976, Hercules sold the site to Vertac, which continued its operations until 1986 and abandoned the site altogether when it went into receivership in 1987. By then there were nearly 29,000 waste-filled drums at the site that contained waste materials including 2,4-D, 2,4,5-T, and dioxin. Many of these drums had corroded and leaked, contaminating more soil, groundwater, and buildings at the site. Contamination was also found in other areas of the site, at the landfills, in nearby neighborhoods, and in grounds adjacent to the site.

Uniroyal was a customer of Vertac's and purchased 2,4,5-T and other products from Vertac during the 1970s. In 1978, Vertac informed Uniroyal that it lacked the funds to purchase enough 1,2,4,5-tetrachlorobenzene (TCB), a key ingredient in the manufacture of 2,4,5-T, to fulfill its regular contractual obligations to Uniroyal. Uniroyal consequently

agreed to supply Vertac with enough TCB to create some 1.3 million pounds of 2,4,5-T that was to be shipped back to Uniroyal. Vertac did not purchase the TCB from Uniroyal, but rather reduced the amount it ultimately charged Uniroyal for the 2,4,5-T to reflect the value of the TCB that Uniroyal had supplied. This arrangement (a "toll conversion agreement") was embodied in two separate contracts and was carried out between March 1978 and March 1979. The 2,4,5-T that was produced with Uniroyal's TCB represents less than one percent of the more than 150 million pounds of 2,4-D and 2,4,5-T that were manufactured at the site over the course of its operation.

Vertac was the last operator of the Jacksonville site. After it abandoned the plant, the United States Environmental Protection Agency (EPA) took over the site, closed down all operations, and assumed cleanup responsibilities that have cost well over $100 million to date.

B. Procedural History

The environmental cleanup undertaken at the site has resulted in extensive litigation over the past 20 years.[3] In 1980, the EPA sued Vertac and Hercules under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6973 *et seq.*, the Clean Water Act, 33 U.S.C. § 1312 *et seq.*, and the Refuse Act, 33 U.S.C. § 407, seeking to enjoin the continuing discharge of hazardous waste at the site. The Arkansas Department of Pollution Control and Ecology

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3. For an account of some of the financial disputes between various contractors involved in the cleanup efforts at the site, see *Costner v. URS Consultants, Inc.*, 153 F.3d 667 (8th Cir.1998).

(Arkansas) sought similar relief under state law. After consolidating the cases, the district court granted a preliminary injunction ordering Vertac to stop the chemical leakage from various disposal areas but denied relief against Hercules, which was not in possession or control of the site at the time. *United States v. Vertac Chemical Corp.*, 489 F.Supp. 870, 888 (E.D.Ark.1980) (*Vertac I*). Several years later, the court approved consent decrees representing a negotiated remedial plan to address the containment and monitoring of waste. *United States v. Vertac Chemical Corp.*, 588 F.Supp. 1294, 1296-97 (E.D.Ark.1984) (*Vertac II*). The lawsuit was later converted into a CERCLA action.

Although Vertac stipulated that it was an owner and operator of the site liable to the government for response costs under CERCLA, it ultimately failed to comply with the consent decrees and eventually sold its assets to third parties, forcing the court in 1987 to appoint a receiver to handle the company's affairs. *United States v. Vertac Chemical Corp.*, 671 F.Supp. 595, 623-24 (E.D.Ark.1987) (*Vertac III*), *vacated*, 855 F.2d 856 (8th Cir.1988) (table); *United States v. Vertac Chemical Corp.*, 756 F.Supp. 1215 (E.D.Ark.1991) (*Vertac IV*), *aff'd*, 961 F.2d 796 (8th Cir.1992). In an effort to identify all those potentially liable for environmental harm at the site, numerous additional parties, including the United States Department of Defense, were brought into the suit.[4] These parties filed various cross-

4. The Department of Defense was found not liable. *United States v. Vertac Chemical Co.*, 841 F.Supp. 884, 891 (E.D.Ark.1993) (*Vertac V*), *aff'd*, 46 F.3d 803 (8th Cir.1995) (*Vertac VI*).

claims, counterclaims, and third party complaints; many of the parties settled and entered into consent decrees.[5]

Beginning in 1993, the district court issued a number of decisions that are the subject of the instant appeal. On October 12, 1993, it entered an order of partial summary judgment in favor of the United States. Dist. Ct. Order at 5 (Oct. 12, 1993) *Vertac V*, 841 F.Supp. 884, 891. The court found Hercules jointly and severally liable under CERCLA for the release of hazardous substances at the Jacksonville site, landfills, neighborhoods, and off-site areas, and rejected Hercules's argument that the harm at the site was divisible. The court reiterated these conclusions on November 1, 1993, and again on May 5, 1998, when it denied motions for reconsideration brought by Hercules.

The remaining claims in the case went to trial on November 3, 1993, before an advisory jury. The jury rejected Hercules's claim for response costs and contribution against Standard Chlorine of Delaware, Inc., a party not involved in this appeal. Uniroyal was found liable to the United States, Arkansas, and Hercules for remediation of wastes at the site and off-site areas. The jury also found that the harm caused by Uniroyal was divisible. Thereafter, the district court filed an opinion in which it endorsed all of the jury's findings except its conclusion regarding divisibility. *United States v. Vertac Chemical Corp.*, 966 F.Supp. 1491, 1501-04 (E.D.Ark.1997) (*Vertac VIII*).

5. Additional parties have attempted to intervene in the Jacksonville site cleanup over the years. *Arkansas Peace Ctr. v. Arkansas Dep't of Pollution Control & Ecology*, 992 F.2d 145 (8th Cir.1993).

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The United States subsequently moved for summary judgment on the issue of cost recoverability, which the district court granted on October 23, 1998. The court rejected several arguments raised jointly by Hercules and Uniroyal in an attempt to establish that the EPA's response decisions were arbitrary and capricious. It declined to consider their takings and due process claims, which it characterized as illegitimate attempts to "relitigate liability." *United States v. Vertac Chemical Corp.*, 33 F.Supp.2d 769, 785 (E.D.Ark.1998) (*Vertac IX*). Accordingly, on August 6, 1999, the court entered judgments of joint and several liability against Hercules in the amount of $100,560,491 plus interest and costs, and against Uniroyal in the amount of $89,084,710 plus interest and costs.

Finally, on December 28, 1999, the district court addressed the issue of allocation of costs between Hercules and Uniroyal for the more than $89 million for which they were both jointly and severally liable.[6] Acknowledging that "Uniroyal and Hercules are left 'holding the bag' for Vertac, who at least arguably caused the greatest amount of harm," Dist. Ct. Order at 3 (Dec. 28, 1999) *U.S. v. Vertac Chemical Corp.*, 79 F.Supp.2d 1034, 1036 (E.D.Ark., 1999) (*Vertac X*), the court determined that Hercules's share of the response costs should be 97.4 percent and Uniroyal's share should be 2.6 percent. *Id.* at 1041. A judgment reflecting these conclusions was entered on February 8, 2000.

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6. The additional $11,182,781 for which Hercules was liable was based on costs associated with the two landfills not at issue in the allocation phase.

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On appeal, Hercules challenges the 1993 entry of partial summary judgment and the court's subsequent denials of its motions to reconsider. Uniroyal challenges the district court's 1997 adoption of the advisory jury's liability verdict but not its rejection of the divisibility verdict. Hercules and Uniroyal together appeal the 1998 recoverability order. Only Hercules appeals the 1999 allocation decision. These appeals have been consolidated.

II. CERCLA

A. Background

CERCLA authorizes the federal government to respond to any threatened or actual release of any hazardous substance that may pose an imminent and substantial public health threat. 42 U.S.C. § 9604. Cleanup decisions are guided by the National Contingency Plan (NCP), which prescribes methods for investigating health and environmental problems resulting from a release or threatened release and establishes criteria for determining the appropriate extent of response activities. 42 U.S.C. § 9605; 40 C.F.R. Part 300; *In re Bell Petroleum Servs., Inc.*, 3 F.3d 889, 894 (5th Cir.1993). Although response activities are initially funded by the Superfund, a multi-billion-dollar fund financed through a combination of appropriations, EPA fees, and industry taxes, 26 U.S.C. § 9507(b), CERCLA provides for the subsequent recovery of response costs from all parties responsible for the release of a hazardous substance. 42 U.S.C. §§ 9607, 9611.

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To establish that a party is liable, CERCLA section 9607(a) requires the government to prove that there has been a release or threat of release of a hazardous substance at a "facility," as a result of which the United States incurred response costs that were necessary and consistent with the NCP, and that the defendant falls within one of four listed categories of responsible parties. 42 U.S.C. § 9607(a); *Control Data Corp. v. S.C.S.C. Corp.*, 53 F.3d 930, 934 (8th Cir.1995). The categories are: (1) current owners or operators of a site at which a release or threatened release occurred; (2) owners or operators of such a site at the time of disposal of hazardous material; (3) generators who arranged for disposal at such a site; and (4) transporters of hazardous waste to such a site. *Id.* CERCLA liability attaches "[n]otwithstanding any other provision or rule of law, and subject only to" three narrowly defined defenses.[7] 42 U.S.C. § 9607(a) & (b). Liability is strict and is typically joint and several. *United States v. Northeastern Pharmaceutical & Chem. Co.*, 810 F.2d 726, 732 n. 3 (8th Cir.1986) (*NEPACCO*). Where multiple defendants are involved, the initial liability finding is followed by a contribution proceeding to allocate damages among responsible parties. *Control Data*, 53 F.3d at 934.

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7. These absolute defenses encompass (1) acts of God, (2) acts of war, and (3) acts or omissions of unrelated third parties where the defendant "establishes by a preponderance of the evidence that (a) he exercised due care with respect to the hazardous substance concerned, taking into consideration the characteristics of such hazardous substance, in light of all relevant facts and circumstances, and (b) he took precautions against foreseeable acts or omissions of any such third party and the consequences that could foreseeably result from such acts or omissions." 42 U.S.C. § 9607(b).

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B. Divisibility of Harm

One aspect of CERCLA that has long vexed courts is the role of causation in the statutory scheme. *Id.* at 935 (describing the causation element as a "problematic portion" of the CERCLA calculus). This is because, "[a]lthough the simplistic slogan 'make the polluter pay' may have helped propel CERCLA into law, the statutory scheme does not take a simplistic view of who is and who is not a 'polluter.'" *Westfarm Assoc. Ltd. Partnership v. Washington Suburban Sanitary Comm'n*, 66 F.3d 669, 681 (4th Cir.1995) (citation omitted). Indeed, at least at the liability stage, the language of the statute does not require the government to prove as part of its prima facie case that the defendant caused any harm to the environment. *Control Data*, 53 F.3d at 935. Rather, once the requisite connection between the defendant and a hazardous waste site has been established (because the defendant fits into one of the four categories of responsible parties), it is enough that response costs resulted from "a" release or threatened release-not necessarily the defendant's release or threatened release.[8] 42 U.S.C.

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8. Although we have stated that "CERCLA focuses on whether *the defendant's* release or threatened release caused harm to the plaintiff in the form of response costs," *Control Data*, 53 F.3d at 935 (emphasis added), the case we cited for that proposition referred not to the defendant's release but merely to "a" release, *General Electric Company v. Litton Industrial Automation Systems, Inc.*, 920 F.2d 1415, 1417 (8th Cir.1990) *abrogated on other grounds, Key Tronic Corp. v. United States*, 511 U.S. 809, 814, 819, 114 S.Ct. 1960, 128 L.Ed.2d 797 (1994). The argument that the government must prove a direct causal link between the incurrence of response costs and an actual release caused by a particular defendant has been

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§ 9607(a)(4). Thus, the government need not trace or "fingerprint" a defendant's wastes in order to recover under CERCLA. *United States v. Monsanto*, 858 F.2d 160, 169-70 (4th Cir.1988). Considerations of causation explicitly enter into the statutory liability scheme only as part of the three statutory defenses not at issue in this case. *Id.* at 170; 42 U.S.C. § 9607(b).

Many courts, however, have recognized the defense of divisibility of harm, a "special exception to the absence of causation requirement" that in effect brings causation principles "back into the case-through the backdoor, after being denied entry at the front door." *United States v. Alcan Alum. Corp.*, 990 F.2d 711, 722 (2d Cir.1993) (*Alcan II*); *see United States v. Township of Brighton*, 153 F.3d 307, 317-19 (6th Cir.1998); *Bell*, 3 F.3d at 894-902; *Alcan I*, 964 F.2d at 268-69; *O'Neil v. Picillo*, 883 F.2d 176, 178-79 (1st Cir.1989); *Monsanto*, 858 F.2d at 171-73. Although we have not been squarely presented with the question whether a divisibility defense should be allowed under CERCLA, we have expressed our approval of the doctrine on several occasions. *Control Data*, 53 F.3d at 934 n. 4 ("Once liability is proved, all of the defendants are jointly and severally liable, unless a particular defendant can establish that his harm is divisible, a very difficult proposition."); *Interstate Power Co. v. Kansas City Power & Light Co.*, 992 F.2d 804, 808 (8th Cir.1993) (remanding for liability findings and suggesting that the district court might find divisible harms);

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rejected by "virtually every court" that has directly considered the issue. *United States v. Alcan Alum. Corp. (Alcan I)*, 964 F.2d 252, 264-65 (3d Cir.1992) (citing cases); *see* 42 U.S.C. § 9607(a)(4).

cf. United States v. Dico, Inc., 136 F.3d 572, 578-79 (8th Cir.1998) (remanding for trial on liability because district court failed to distinguish between two geographically separate areas within single hazardous waste site).

The parties in this case do not dispute the general validity of the divisibility doctrine, and we find it to be both compatible with the text and the overall statutory scheme of CERCLA[9] and a sensible way to avoid imposing on parties excessive liability for harm that is not fairly attributable to them. *See Alcan I*, 964 F.2d at 269. We thus proceed to a more detailed discussion of the doctrine.

The universal starting point for divisibility of harm analyses in CERCLA cases is the Restatement (Second) of Torts, which provides for the apportionment of damages among two or more parties when at least one is able to show either (1) "distinct harms" or (2) a "reasonable basis for determining the contribution of each cause to a single harm." Restatement (Second) of Torts § 433A (1965); *see Township of Brighton*, 153 F.3d at 318; Bell, 3 F.3d at 895; *Chem-Dyne*, 572 F.Supp. at 810. We will follow the Restatement, however, only to the extent that it is compatible with the

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9. Other courts have persuasively argued, based on the legislative history surrounding CERCLA and its 1986 Superfund amendments, that the divisibility of harm doctrine is consistent with the intent of Congress that " 'traditional and evolving common law principles' should define the scope of liability under CERCLA." *Redwing Carriers, Inc. v. Saraland Apts.*, 94 F.3d 1489, 1513 (11th Cir.1996) (quoting *Bell*, 3 F.3d at 895); *see O'Neil*, 883 F.2d at 178-79; *Monsanto*, 858 F.2d at 171 n. 23; *United States v. Chem-Dyne Corp.*, 572 F.Supp. 802, 805-08 (S.D.Ohio 1983).

provisions of CERCLA. *See O'Neil*, 883 F.2d at 179 n. 4 (describing the Restatement as "one source for us to consult"). Thus, for example, although the Restatement contemplates that plaintiffs bear the burden of proving causation, in a CERCLA case, once the government has established the four essential elements of liability the burden shifts to the defendant to demonstrate, by a preponderance of the evidence, that there exists a reasonable basis for divisibility. *Township of Brighton*, 153 F.3d at 318; *O'Neil, 883 F.2d at 182*. Divisibility generally limits the scope of, but does not entirely eliminate, CERCLA liability since the doctrine is essentially a defense only to joint and several liability. *Control Data*, 53 F.3d at 934 n. 4; Bell, 3 F.3d at 895.

We have previously observed that proving divisibility is a "very difficult proposition," *Control Data*, 53 F.3d at 934 n. 4, and the Restatement recognizes that some harms, "by their nature, are normally incapable of any logical, reasonable, or practical division." Restatement (Second) of Torts § 433A cmt. to subsection (2) (1965), *quoted in Bell*, 3 F.3d at 896. Where this is the case, the Restatement cautions against making an "arbitrary apportionment for its own sake." *Id.; see also United States v. Colorado & Eastern R. Co.*, 50 F.3d 1530, 1535 (10th Cir.1995) (noting that "the courts have been reluctant to apportion costs" and that "responsible parties rarely escape joint and several liability"); *O'Neil*, 883 F.2d at 183 (defendants hoping to escape joint and several liability must satisfy the "stringent burden placed on them by Congress"). When a defendant is successful in demonstrating a reasonable basis for apportionment, approaches to divisibility will vary tremendously depending

on the facts and circumstances of each case. Evidence of divisibility will focus on determining the amount of harm caused by the defendant. *Bell*, 3 F.3d at 903. Our description below of some of the most common approaches is by no means intended to be exhaustive, for "we know that we cannot define for all time what is a reasonable basis for divisibility and what is not." *Township of Brighton*, 153 F.3d at 319.

"Distinct harms" are those that may properly be regarded as separate injuries. *See* Restatement (Second) of Torts § 433A (1965); *Bell*, 3 F.3d at 895. Defendants may be able to demonstrate that harms are distinct based on geographical considerations, such as where a site consists of "non-contiguous" areas of soil contamination, *Akzo Coatings, Inc. v. Aigner Corp.*, 881 F.Supp. 1202, 1210 (N.D.Ind.1994), *clarified on reconsid.*, 909 F.Supp. 1154 (N.D.Ind.1995), or separate and distinct subterranean "plumes" of groundwater contamination, *United States v. Broderick Investment Co.*, 862 F.Supp. 272, 277 (D.Colo.1994).

Other cases, by contrast, involve a "single harm" that is nonetheless divisible because it is possible to discern the degree to which different parties contributed to the damage. *Id.* The basis for division in such situations is that "it is clear that each [defendant] has caused a separate amount of harm, limited in time, and that neither has any responsibility for the harm caused by the other," such as where "two defendants, independently operating the same plant, pollute a stream over successive periods of time." *Bell*, 3 F.3d at 895. Single harms may also be "treated as divisible in terms of degree," based, for example, on the relative quantities of waste discharged

into the stream. *Id.* at 895-96. Divisibility of this type may be provable even where wastes have become cross-contaminated and commingled, for "commingling is not synonymous with indivisible harm." *Alcan II*, 990 F.2d at 722; *see also Bell*, 3 F.3d at 903.

Evidence supporting divisibility must be concrete and specific. *See United States v. Alcan Alum. Corp.*, 892 F.Supp. 648, 657 (M.D.Pa.1995) (*Alcan III*) (rejecting divisibility argument on remand because defendant took "all or nothing approach," presenting no new evidence beyond what court of appeals had already considered), *aff'd*, 96 F.3d 1434 (3d Cir.1996) (table). The preliminary issue of whether the harm to the environment is capable of apportionment among two or more causes is a question of law. *Bell*, 3 F.3d at 902. Then, "[o]nce it has been determined that the harm is capable of being apportioned among the various causes of it, the actual apportionment of damages is a question of fact." *Id.* at 896.

We also observe that the divisibility doctrine is conceptually distinct from contribution or allocation of damages. *See Redwing*, 94 F.3d at 1513. At the allocation phase, the only question is the extent to which a defendant's liability may be offset by the liability of another; the inquiry at this stage is an equitable one and courts generally take into account the so-called "Gore factors." *See* 42 U.S.C. § 9613(f) (providing that a court "may allocate response costs among liable parties using such equitable factors as the court determines are appropriate"); *Township of Brighton*, 153 F.3d at 318; *Control Data*, 53 F.3d at 935. The divisibility of harm inquiry, by contrast, is guided not by equity-specifically, not by the Gore factors-but by principles of causation alone.

United States v. Rohm & Haas Co., 2 F.3d 1265, 1280-81 (3d Cir.1993). Thus, where causation is unclear, divisibility is not an opportunity for courts to "split the difference" in an attempt to achieve equity.[10] *Township of Brighton*, 153 F.3d at 319. Rather, "[i]f they are in doubt, district courts should not settle on a compromise amount that they think best approximates the relative responsibility of the parties." *Id.* In such circumstances, courts lacking a reasonable basis for dividing causation should avoid apportionment altogether by imposing joint and several liability. *Id.*

III. ANALYSIS

A. Hercules

Hercules challenges the district court's imposition of joint and several liability, raising various divisibility arguments that are specific to certain areas of the site, off-site areas, neighborhoods, and landfills. In some of these arguments Hercules urges us to reverse outright the entry of summary judgment against it and instruct the district court to deduct from the final judgment all response costs pertinent to the area at issue; in others it asks us to hold simply that there is a reasonable basis for divisibility and remand to the district court to apportion the harm. We review the district

10. Accordingly, we reject any suggestion that the financial condition of the parties should play a role in a CERCLA divisibility analysis. ***But see Bell***, 3 F.3d at 896 (noting that the Restatement allows courts to consider insolvency); *id.* at 902 n. 13 ("[T]here may be exceptional cases in which it would be unjust to impose several liability, such as when one of the defendants is so hopelessly insolvent that the plaintiff will be unable to recover any damages from it.").

court's October, 1993, summary judgment decision (*Vertac V*) de novo, viewing the evidence in the light most favorable to the nonmoving party. *Dico*, 136 F.3d at 578. We will affirm only if we conclude that there are no genuine issues of material fact and that the United States is entitled to judgment as a matter of law. *United States v. Findett Corp.*, 220 F.3d 842, 845 (8th Cir.2000); Fed.R.Civ.P. 56.

We believe that the district court's analysis of Hercules's divisibility arguments reflects a fundamental misunderstanding of the doctrine of divisibility. These legal errors clouded the court's view of the evidence supporting divisibility. For example, when the district court discussed divisibility in *Vertac V*, it did so in summary fashion, stating merely that "Hercules has not set forth any facts establishing that the harm is clearly divisible, or that Hercules' waste did not, or could not, contribute to the release and the resulting response costs at the site." *Vertac V*, Dist. Ct. Order at 4 (Oct. 12, 1993). The proper standard for determining divisibility, however, is that the defendant show either distinct harms or a "reasonable basis" for apportioning causation for a single harm. Restatement (Second) of Torts § 433A (1965). A defendant need not prove that its "waste did not, or could not, contribute" to any of the harm at a CERCLA site in order to establish divisibility, because it is also possible to prove divisibility of single harms based on volumetric, chronological, or other types of evidence. *Bell*, 3 F.3d at 895-96. A site may also be divisible if a defendant can establish that it consists of "non-contiguous" areas of contamination. *Akzo*, 881 F.Supp. at 1210; *Broderick*, 862 F.Supp. at 277.

Accordingly, we reverse the summary judgment against Hercules on the issue of liability (*Vertac V*) and remand so that the district court can address the evidence supporting divisibility in light of the proper legal standards. In so holding, we reject the EPA's suggestion that evidence adduced subsequent to summary judgment-specifically, evidence presented against Uniroyal at the 1993 liability trial and evidence from the 1998 allocation trial-incontrovertibly demonstrates that Hercules cannot prevail on any of its divisibility arguments. By the same token, we deny Hercules's request that we reverse the district court's decision outright and hold that certain harms were divisible, for we conclude that the question of divisibility is one to be determined in the first instance by the district court.

B. Uniroyal

Uniroyal challenges the district court's conclusion that it fits within one of CERCLA's four categories of responsible parties-namely, that it is liable as an "arranger" under 42 U.S.C. § 9607(a)(3). Uniroyal does not contest the other three relevant statutory elements of CERCLA liability. We review the district court's factual findings for clear error and its legal conclusions de novo. *Consolidated Electrical & Mechanicals, Inc. v. Biggs General Contracting, Inc.*, 167 F.3d 432, 434 (8th Cir.1999).

In *Vertac VIII*, the district court noted that we have "given a liberal interpretation to 'arranger liability.'" *Vertac VIII*, 966 F.Supp. at 1501. The court made this observation in light of our decision in *United States v. Aceto Agricultural Chemicals Corp.*, 872 F.2d 1373 (8th Cir.1989), in which

we declined to dismiss a CERCLA complaint alleging that a number of pesticide manufacturers were liable for supplying to a formulator materials used to create a final product where (1) the suppliers retained an ownership interest in the materials throughout the formulation process as well as in the finished product, (2) the generation of wastes was inherent in the formulation process, and (3) wastes were in fact generated and disposed. *Id.* at 1378-82. In *Vertac VIII*, 966 F.Supp. at 1501, the district court found that Uniroyal's toll conversion agreement to supply TCB to Vertac for formulation into 2,4,5-T closely tracked the legal standards set forth in *Aceto*, and on appeal the EPA argues that this case is "nearly identical" to *Aceto*. We agree.

Uniroyal first contends that the district court erred as a matter of law by focusing its analysis on ownership, and not on the authority to control the production and disposal process. Uniroyal argues that in *Aceto*, a case that considered no actual facts but only the prima facie validity of a complaint, ownership was deemed significant only insofar as it gave rise to a permissible inference of authority to control. Here, by contrast, Uniroyal suggests that the district court erroneously elevated mere ownership to the level of a sufficient basis for finding arranger liability. We conclude that this argument fails.

Although we stated in *Aceto* that "it may be reasonably inferred that [defendants] had the authority to control the way in which the pesticides were formulated," *id.* at 1383, this observation came as part of our discussion of RCRA and was not necessary to our prior conclusion that the complaint stated a valid claim under CERCLA. Indeed, in

the portion of *Aceto* that discussed CERCLA, we specifically rejected the defendants' contention that control is required in every circumstance. To support their argument, the defendants in *Aceto* quoted *NEPACCO*, 810 F.2d at 743, for the proposition that they should "escape liability because they had no authority to control" the formulation and disposal process. *Aceto*, 872 F.2d at 1381-82. We distinguished *NEPACCO* by observing that a finding of control had been necessary in that case only because ownership was lacking. *Id.* at 1382. The *Aceto* defendants, however, unlike those in *NEPACCO*, "actually owned the hazardous substances, as well as the work in process," *id.*, and thus an arguable absence of control did not mandate dismissal of the complaint. Control, therefore, is not a necessary factor in every case of arranger liability. *See also United States v. TIC Investment Corp.*, 68 F.3d 1082, 1087-88 (8th Cir.1995) (holding that a finding of arranger liability requires either control over, or "some level of participation in," activities related to the arrangement of hazardous waste disposal).

Uniroyal also challenges the district court's factual finding that Uniroyal "retained an ownership interest in its material during the processing stage" and "owned the 2,4,5-T that was returned." *Vertac VIII*, 966 F.Supp. at 1501. In reaching this determination, the district court relied heavily on the fact that Uniroyal, which purchased its TCB in Europe, imported it into the United States under a temporary import bond to avoid the payment of taxes and duties. *Id. at 1498-99.* Under the terms of the bond, the Customs Office required, throughout the toll agreement transaction, that Uniroyal maintain ownership of the TCB. Uniroyal agreed to have the TCB processed into 2,4,5-T for shipment to Canada within

one year. *Id.* That Uniroyal's interactions with Vertac in fact met these demands is supported by a 1982 letter that was sent by a Uniroyal attorney to the Customs Commissioner as part of a dispute over the bond requirements.

On appeal, however, Uniroyal argues that the terms of the temporary import bond cannot change the "real character" of its interaction with Vertac, which it describes as having involved so much intermingling of materials that Uniroyal could not have owned either the "work in process" or the finished product throughout the entire transaction. To bolster its position, Uniroyal points to the testimony of Robert Ellis, Vertac's controller of the Jacksonville plant, in which Ellis explained that Uniroyal's supply arrangement with Vertac differed from typical toll conversion agreements in several respects. Ellis testified, for example, that TCB was only one ingredient out of a total of seven materials required to produce 2,4,5-T (albeit "the key ingredient," *Vertac VIII*, 966 F.Supp. at 1498), and that many of the bookkeeping practices of Vertac and Uniroyal during the agreement period were compatible with the view that Vertac owned the TCB throughout the formulation process.

Although we find the ownership issue to be debatable, the evidence in favor of Uniroyal's position is not strong enough to convince us that the district court's resolution of this factual dispute is clearly erroneous-a conclusion that demands a definite and firm conviction on our part that a mistake has been made. *Consolidated Electrical*, 167 F.3d at 434. In deciding questions of arranger liability, we do not rely on bright-line rules but look to the totality of the circumstances to determine whether the facts of a given case

fit within CERCLA's "overwhelmingly remedial scheme." *NEPACCO*, 810 F.2d at 733, *quoted in Aceto*, 872 F.2d at 1380; *see TIC Investment*, 68 F.3d at 1090 (totality of the circumstances). Even were we to conclude that, on balance, Uniroyal and Vertac intended the supply of TCB to be technically considered a "sale," we have "not hesitated to look beyond defendants' characterizations to determine whether a transaction in fact involves an arrangement for the disposal of a hazardous substance." *Aceto*, 872 F.2d at 1381. Here, where Uniroyal provided Vertac with the main ingredient necessary for the production of 2,4,5-T during a period of financial difficulty for Vertac, and was not charged for the TCB until the relevant amount was offset against its final purchase price, we see no basis to reverse the district court's finding that Uniroyal owned the material throughout the transaction and thus qualified as an "arranger" under CERCLA. Accordingly, we affirm the judgment of liability against Uniroyal (*Vertac VIII*).

C. Other Arguments

Because we remand the case on the antecedent issue of liability, we decline to address questions related to recoverability or contribution, nor do we address Hercules's constitutional arguments. *See Int'l Assoc. of Firefighters, Local No. 3808 v. Kansas City*, 220 F.3d 969, 975 (8th Cir.2000).

Uniroyal also presents takings and due process challenges to the retroactive application of CERCLA in this case. It argues, relying on *Eastern Enterprises v. Apfel*, 524 U.S. 498, 118 S.Ct. 2131, 141 L.Ed.2d 451 (1998), that the

imposition of liability in this instance is unconstitutional because the liability could not be anticipated and because it is substantially disproportionate to Uniroyal's conduct related to the pollution at the site and in the surrounding areas. We decline to address these arguments for two reasons.

First, we believe that Uniroyal's constitutional arguments are not ripe for our consideration. Without addressing the merits of Uniroyal's claims, we observe that it essentially presents an as-applied constitutional challenge to CERCLA. Because we are vacating the recoverability and contribution judgments, however, there exists no final judgment of liability against Uniroyal. This determination will be made by the district court on remand. Because we can only speculate as to what conclusions the district court may reach, it would be premature for us to address the question of whether Uniroyal's liability is unconstitutionally disproportionate to its underlying conduct. *See Babbitt v. United Farm Workers Nat'l Union*, 442 U.S. 289, 298, 99 S.Ct. 2301, 60 L.Ed.2d 895 (1979) (citation omitted) (federal courts should not address hypothetical or abstract disputes).

Second, we observe that Uniroyal presents only skeletal constitutional arguments of its own while purporting to incorporate and adopt Hercules's more thorough constitutional analysis. We note, however, that an inquiry into the constitutionality of CERCLA in this case would be "essentially ad hoc and fact intensive." *See Eastern Enterprises*, 524 U.S. at 523, 118 S.Ct. 2131 (plurality opinion). Because the record indicates that Hercules's potential liability in this case is predicated on facts materially different from those underlying Uniroyal's liability, and

because the ultimate liability of both Hercules and Uniroyal remains unknown, we conclude that Uniroyal has not adequately briefed the complexities involved in its constitutional challenge to CERCLA.

IV. Conclusion

The summary judgment against Hercules on the issue of liability (*Vertac V*) is reversed. On remand, the district court should address Hercules's divisibility arguments. The judgment of liability against Uniroyal (*Vertac VIII*) is affirmed. The judgments of recoverability (*Vertac IX*) and contribution (*Vertac X*) are vacated; these issues should be revisited by the district court following further proceedings consistent with this opinion. All pending motions to strike are denied.

APPENDIX D — MEMORANDUM OPINION AND ORDER OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF ARKANSAS, WESTERN DIVISION DATED OCTOBER 23, 1998

UNITED STATES DISTRICT COURT
E.D. ARKANSAS,WESTERN DIVISION

No. LR-C-80-109.

Oct. 23, 1998.

UNITED STATES of America,

Plaintiff,

v.

VERTAC CHEMICAL CORP., et al.,

Defendants.

MEMORANDUM OPINION AND ORDER

GEORGE HOWARD, JR., District Judge.

After eighteen years of litigation, and the expenditure of over $102,000,000.00 to date, the United States of America is ready to recover its costs associated with the cleanup of the Vertac Site pursuant to Section 107 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9607.[1] The United States has filed

1. The history of the Vertac Site and Off-Site areas has been discussed in a number of decisions. *See United States v. Vertac Chemical Corp.*, 966 F.Supp. 1491, 1494 n. 1 (E.D.Ark.1997).

a motion for summary judgment on the issue of costs. The two parties found to be jointly and severally liable, Uniroyal Chemical, Ltd. (Uniroyal) and Hercules Incorporated (Hercules), object and argue that the United States is not entitled to recovery of costs as the actions of the United States Environmental Protection Agency (EPA) were arbitrary, capricious and not in accordance with law. They have filed motions for summary judgment with regard to EPA's claims.[2]

The Vertac Plant Site (site) is located in Jacksonville, Arkansas. The site was used for the manufacture of herbicides and other chemicals since the 1940s. As a result of the production, the land, buildings, equipment, groundwater, sewer lines, two sewage treatment plants, and flood plains and adjacent creeks became contaminated with 2,3,7,8-TCDD (dioxin) and other chlorinated carbon compounds. In 1983, EPA placed the site on the National Priority List (NPL) of Superfund cleanup sites established pursuant to Section 105 of CERCLA.

In carrying out the response measures, EPA divided the site into five units Off-Site Areas, Operable Units 1,2 and 3, and the Incineration response action. There were several removal actions that consisted of removing the immediate threat posed by the thousands of drums of waste containing hazardous substances left on the site when it was abandoned. Four remedial actions addressed the long-term solutions for the rest of the site and the surrounding area affected by the site. For each of the remedial actions, the National Contingency Plan (NCP) required the EPA (1) to conduct a

2. Uniroyal and Hercules have adopted each other's motion for summary judgment.

"remedial investigation" (RI) of the site conditions, including an "endangerment assessment" (EA) of the threats posed by the contamination at the site; (2) to perform a "feasibility study" (FS) examining the various technical alternatives for remediating the site; (3) to take public comment on EPA's proposed remedial action plan based on the alternatives discussed in the FS; (4) to compile an administrative record for remedial action decision making; and (5) to issue a written ROD explaining the agency decision-maker's (the Regional Administrator) reasoning in selecting the final remedial action plan, and responding to the public comments received. The Court will first discuss the response actions at each of the units and second the arguments raised by the parties.

FACTUAL BACKGROUND

Incineration Response Action

When Vertac abandoned the site, it left behind more than 28,500 drums containing 2,4-D (Dichlorophonoxyacetic Acid) and 2,4,5-T (Trichlorophenoxyacetic Acid) still bottom wastes, dioxin and other hazardous and toxic substances. In addition, bulk storage tanks containing process materials and substantial quantities of contaminated trash remained on-site. According to an August 19, 1987 Action Memorandum, the drums were leaking potentially hazardous material, were stored in deteriorated sheds, on uncurbed concrete pads, and in open fields. Over 15,000 drums were stored outside exposed to the elements. Drums were stacked three high on deteriorating wooden pallets. EPA determined that the wastes on the site posed a threat to public health and welfare and the environment. Residents in the area could be

exposed to hazardous substances and should a large release occur, in the event of a tornado, fire, or continued poor maintenance, the toxic waste would contaminate the environment. EPA initiated a removal action in 1987 to stabilize the drums and tanks and to provide site security. By February, 1989, the failed drums had been placed inside new, larger drums (overpacked) and the tanks had been stabilized. However, the corrosive materials in the drums and tanks continued to cause deterioration and drum and tank inspection and maintenance were an ongoing project.

The drummed material was considered acutely hazardous waste and was characterized as "F-listed" waste under applicable Resource Conservation and Recovery Act (RCRA) regulations, 40 C.F.R. Part 261, App. VII.. Because of the characteristics of the wastes involved, EPA chose to dispose of the wastes by incineration. The Arkansas Department of Pollution Control and Ecology (ADPC & E or the State) entered into a contract for the drum incineration, and planned to fiance the cleanup with $10.7 million provided by Vertac.[3]

EPA proposed to conduct a removal action to support the State's incineration efforts. This removal action was performed as a "non-time critical" removal action. EPA performed an Engineering Evaluation/Cost Analysis (EE/CA) in 1989 with regard to the non time-critical action to provide support for the State's incineration project.[4] After the

3. The $10.7 million consisted of a $6.7 million trust fund established by Vertac and a $4 million letter of credit provided by Vertac.

4. Under the 1990 National Contingency Plan (NCP), EPA must complete an environmental evaluation cost analysis (EE/CA) when (Cont'd)

EE/CA was completed, EPA conducted a public meeting and solicited public comments on its proposed support measures.

ADPC & E signed a contract with MRK, Inc. in July, 1989, for the incineration of the 28,500 drums of still bottom wastes. MRK, Inc. subsequently entered into a joint operating agreement with Morris-Knudsen, Inc., creating the venture known as Vertac Site Contractors (VSC). VSC erected a conventional rotating kiln incinerator. The first trial burn was completed in December, 1990. In April, 1991, ADPC & E notified VSC that the trial burn would have to be repeated because of, among other reasons, data gaps, and unacceptable laboratory procedures. After numerous delays, a second trial burn was conducted in October, 1991.[5] Approval of the second trial burn and certification to incinerate dioxin wastes were announced by the State on January 2, 1992.[6]

(Cont'd)
it determines that "a planning period of at least six months exists before onsite activities must be initiated . . ." Removal actions having such a planning period are referred to as "non-time critical removal actions." The term "time critical removal actions" refers to removal actions which do not allow for a six month planning period. The NCP does not require an EE/CA for time-critical removal actions. 40 C.F.R. § 300.415(b)(4)(i). The incineration support action was not a "time-critical" action, while the incineration itself was.

5. The delays include a citizens' lawsuit in federal court, *National Toxics v. Arkansas Pollution Control & Ecology*, LR-C-91-194 (filed April 1, 1991) attempting to stop the trial burn.

6. Incineration drew community opposition based on the assertion that it was not safe. In a complaint filed by the Arkansas Peace Center, Environmental Health Association of Arkansas, (Cont'd)

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(Cont'd)
Jacksonville Mothers' and Children's Defense Fund, Veterans of America, Arkansas State Chapter, and Mothers Air Watch, the plaintiffs challenged incineration on the basis that the State had not demonstrated that the incinerator could achieve a 99.9999% destruction and removal efficiency ("DRE") on the dioxin (the "six nines" requirement). 40 C.F.R. § 264.343. The plaintiffs sought injunctive relief to stop the incineration and to require EPA and ADPC & E to prepare a RI/FS to determine treatment and disposal options other than incineration for the hazardous wastes stored at the site. In that case, then Chief Judge Reasoner allowed two scheduled test burns of the T-wastes to go forward, but enjoined VSC from further incineration of the T-wastes until a hearing on the request for a preliminary injunction. At a subsequent hearing, the court extended the injunction to prohibit the incineration of D-wastes. On March 17, 1993, Judge Reasoner entered a preliminary injunction barring all incineration of drums of hazardous wastes that had not already been shredded in preparation for incineration. The court concluded that the regulation requires that the incinerator demonstrate a six nines DRE on dioxin itself rather than on a surrogate principal organic hazardous constituent. *See Arkansas Peace Center v. Arkansas Dept. of Pollution, Control and Ecology*, 1993 WL 95654 (E.D.Ark.1993). The Eighth Circuit Court of Appeals reversed, finding that the court did not have jurisdiction to challenge a removal action pursuant to 42 U.S.C. § 9613(h). *Arkansas Peace Center v. Arkansas Dept. of Pollution, Control and Ecology*, 999 F.2d 1212 (8th Cir.1993), cert. denied, 511 U.S. 1017, 114 S.Ct. 1397, 128 L.Ed.2d 70 (1994). In dicta, the court found that the district court erred in finding that the regulation required demonstration of six nines DRE on dioxin.

In its prior order staying the preliminary injunction, which was subsequently reversed, the Eighth Circuit noted the risks of allowing the hazardous wastes to remain untreated. "We think granting the stay, and allowing the incinerator to operate, serves the public interest because doing nothing to the thousands of drums of hazardous wastes
(Cont'd)

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A dispute developed between the State and VSC regarding compensation for "downtime." Claims by VSC would have used up the amount available from the trust fund. Eventually, the State and VSC signed an agreement for the continued incineration of the wastes. The State agreed to pay VSC for certain "downtime," and also agreed to increase the compensation rate from approximately $850.00 per ton to $2,800.00 for continued incineration until the trust fund was depleted.

The State managed the incineration until June 3, 1993, when the State notified EPA that it was terminating its incineration contract with VSC. Prior to that time, EPA's role had been to support the State by maintaining the drummed waste, moving drums from storage facilities on-site to the incinerator, conducting ambient air monitoring around the site and in residential areas, testing salt and ash residuals and disposal of the delisted ash residue.

When it became apparent that the State was not going to be able to complete the incineration of the drummed waste with the funds it had available, EPA began considering its options for the disposal of the remaining drummed waste. On September 28, 1992, the EPA Regional Administrator for EPA Region VI requested approval of a federal removal action and an exemption from the statutory $2 million ceiling increase and one year time limit for removal actions under

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(Cont'd)
involves substantial risks of accidental and uncontrolled releases of toxic substances into the environment, whereas incineration destroys the toxic substances." *Arkansas Peace Center v. Arkansas Dept. of Pollution, Control and Ecology*, 992 F.2d 145, 147 (8th Cir.1993).

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CERCLA. 42 U.S.C. § 9604(c)(1)(C). The Regional Administrator determined that immediate federal removal action was necessary to complete the incineration as the state's trust funds were insufficient to complete the incineration and there was the risk of exposure to the population by the threat of release, fire or explosion if the wastes were not incinerated. EPA determined that an imminent threat to the community existed given that over 16,000 drums remained containing highly corrosive and hazardous wastes.[7]

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7. In describing the threats to public health or welfare of the remaining drums, EPA stated in the September 28, 1992, action memorandum:

> The drum contents are highly corrosive and some drums have been overpacked a number of times. Drum failures could cause exposure to nearby residents. The threat of an onsite fire causing the drum contents to ignite is significant. Neighborhoods are within 300 yards of the material and dibenzo-p-dioxins and furans would be expected to be released both directly and as products of incomplete combustion if burned under uncontrolled circumstances.
>
> . . . . .
>
> The drums contain high volumes of flammable solvents. Weather conditions in the vicinity of Jacksonville include frequent thunderstorms and lightning strikes, and the area has a high incident of tornadoes. A fire on the site could ignite the drummed waste which could spread chlorinated dioxins above the action level to nearby

(Cont'd)

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In its September 28, 1992, Action Memorandum, EPA evaluated alternative responses to the threat to public health, welfare, and the environment posed by the onsite drums. EPA evaluated seven options including continued drum maintenance without treatment, on-site incineration, off-site incineration, and stabilization and on-site landfilling of the wastes. Continued drum maintenance was ruled out because it did not eliminate the threat. On-site landfilling was eliminated because it could not be done in compliance with RCRA regulations banning land disposal of F-listed wastes and, in any event, the waste could not be effectively stabilized for landfilling. Off-site incineration was ruled out because the only facility in the country permitted to incinerate dioxin waste was unable to do so because of a limited permit. EPA determined that on-site incineration of the wastes, after also considering the costs, was the preferred method of addressing the threat posed by the drummed wastes.

EPA therefore took over the on-site incineration of the drums to mitigate the threat presented and to avoid any delay in the disposal process. By conducting the incineration as a time-critical removal action, EPA was able to resume incineration of the drummed waste on June 8, 1993.

(Cont'd)

residential areas. The entire east and south perimeters of the site are residential areas. The Little Rock Air Force Base is a relatively short distance to the northwest. Some residences are within a few hundred yards of the largest concentration of the drums.

September 28, 1992 Action Memorandum at 11-12 (Administrative Record 03358632-03358633).

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In August, 1994, EPA continued to find that the on-site drums presented a significant threat to human health, welfare, and the environment. EPA's concern about the threat of fire and explosion had been heightened by a fire that broke out in an on-site office building on May 20, 1994. EPA continued to note the danger presented by the possibility of a tornado.

In August, 1994, EPA became aware that APTUS, a commercial facility located in Coffeyville, Kansas, was permitted to process dioxin wastes. EPA decided to ship the remaining 3,260 drums of 2,4,5-T wastes to APTUS. In an August 15, 1994, Action Memorandum, EPA documented that the cost to incinerate Vertac drummed waste at the APTUS facility would be similar to the on-site incineration costs, and that incineration both on-site and off-site could shorten the time for on-site incineration. Thus, both on-site and off-site incineration was determined to be the preferred removal response.

EPA completed the on-site incineration of the 2,4-D drummed waste in October, 1994. The Vertac on-site incineration activities ceased in January, 1995. Off-site shipment of the 2,4,5-T drums was completed in March, 1996.

After the completion of the on-site incineration, EPA had to arrange for the disposal of the salt and ash residual. Based on sampling, EPA determined that neither the salt nor ash was contaminated with dioxin at concentrations above one part per billion (ppb), the allowable limit for land disposal. While the salt contained levels of other materials (cadmium, chromium or lead) which exceeded allowable concentrations

for land disposed wastes, EPA determined that the salts could be treated to be eligible for on-site disposal in a RCRA Subtitle C landfill.

This was done as a non-time-critical removal action. On March 5, 1996, EPA submitted an addendum to the original June 12, 1989 EE/CA and submitted it for public comment. The community expressed concern about the size of the on-site landfill. EPA determined that the ash and shredded pallets could be disposed of in the on-site RCRA landfill because of the low dioxin levels. The salt was sent off-site to a RCRA landfill because of the high volume of the salt (34,000 drums) and concern that the size of the existing on-site landfill not exceed 25 feet, the maximum height which the community was willing to accept.

The incinerator was decontaminated and dismantled for placement in the on-site hazardous landfill. Pursuant to a December 20, 1996, Action Memorandum, EPA decided to issue a unilateral administrative order to Hercules, Uniroyal, and Vertac. The recipients of the order would be required to dismantle the incinerator and its associated structures and debris and decontaminate these materials. The drum disposal removal action was completed during the summer of 1997.

Off-Site Areas

The Off-Site areas consist of the locations near the site where hazardous substances came to be located. The initial RI was performed between the fall of 1983 and spring of 1985. The purpose was to determine if dioxin had migrated beyond the plant site and, if so, to identify contaminated

areas. The initial Vertac Offsite FS identifying seven potential alternatives for offsite remediation was completed in June, 1986. A public meeting was held in Jacksonville, Arkansas on July 15, 1986, to explain the results of the FS, answer questions and accept comments.

Because of amendments in 1986 to CERCLA, the selection of a remedy was postponed. EPA completed a supplemental FS in June, 1990. Pursuant to section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice, in July, 1990, of the completion of FS and of the proposed plan for remedial action for the off-site areas and provided for public comment on he proposed plan.

The ROD was issued in September, 1990 to address contamination in the off-site areas, including sewage collection lines, the old sewage treatment plant, the West Wastewater Treatment Plant, Rocky Branch Creek, and Bayou Meto Flood Plain. The remedy, which was completed in April, 1998, included the excavation of soils from the Rocky Branch Creek flood plain, removal of sediments from the sewage collection lines, removal of sludge from the sludge digester at the sewage treatment plant, and the excavation of dioxin contaminated soil from the banks of the Rocky Branch Creek and replacement with clean soil.

Hercules performed the remedial design and construction work under a CERCLA Unilateral Administrative Order (UAO) with EPA oversight.

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On-Site Operable Unit No. 1 (OU # 1)
(Above Ground Media)

From March, 1987 through April, 1988, EPA performed an inventory of the process vessels (e.g. storage tanks, chemical reaction vessels) in the central process area. A sampling of the vessels in 1991 revealed the presence of dioxin.

The OU # 1 FS and RI were finalized at the end of March, 1991, and the proposed plan was released in February 1993. Hercules conducted the RI/FS pursuant to an Administrative Order on Consent (AOC) with EPA. A public comment period was held from February through April, 1993 and the ROD for OU # 1 was issued on June 30, 1993.

The ROD addressed the contaminated above-ground structures in the main production area of the Vertac Site. It required that plant equipment be dismantled and salvaged to the extent possible, and that all other nonsalvageable material be placed in an on-site landfill. Any hazardous material not suitable for the landfill was to be incinerated.

Hercules implemented the remedy pursuant to a UAO and completed all work in early 1998.

Operable Unit # 2 (OU # 2) (Soils, Foundations and Underground Utilities)

Between 1989 and 1992, a RI was conducted to determine the levels of hazardous substances present in the soils at the site. Hercules performed the RI/FS pursuant to

an AOC. The RI was finalized in December, 1992, and the FS was finalized in April, 1995.

Following the release of the original proposed plan for OU # 2 in May, 1995, and the subsequent community meeting, the EPA Administrator issued a series of administrative reforms for the Superfund Program requiring EPA to revise the proposed plan of action of OU # 2. EPA issued a Supplemental Proposed Plan in February, 1996, and presented it to the public. The public objected to the proposed plan, which proposed on-site landfilling of soil contaminated with dioxin in excess of 50 ppb.

In light of community concerns EPA reevaluated the FS and two proposed plans. The ROD for OU # 2 was signed in September, 1996, and addressed contaminate on-site soils, foundations, underground utilities at the site, as well as contaminated off-site soils and sediments that had previously been excavated from off-site areas and stored on the site. The remedy selected required the excavation of dioxin contaminated soils, and the disposal of this soil in the on-site containment vault. Hercules performed the remedial design and construction pursuant to a UAO. The work was completed in May, 1998.

Operable Unit No. 3 (OU # 3) (Groundwater)

The ROD for OU # 3, issued September, 1996, dealt with ground water contamination under the site. During the RI process, additional groundwater monitoring wells were installed to determine the nature and extent of non-aqueous phase liquid contamination. After consideration by EPA of

the remedial alternatives set forth in the FS, it selected a remedy that focused on controlling the off-site migration of contaminated groundwater by installation of extraction wells, as well as the continued operation of the french drain system.

The remedy was expected to be completed this year.

The Jacksonville and Rogers Road Landfills

As a result of citizens' complaints, EPA first investigated the Jacksonville and Rogers Road Landfill sites in 1983. Site investigations revealed the presence of rusting drums, strong chemical odors and damage to flora and fauna indicating contamination. Subsequent RIs confirmed that dioxin, 2,4,5-T, 2,4,5-TP and other chemicals had been disposed of and released at both sites. EPA completed its FS, received public comments on the available remedies and held a public meeting in 1990.

EPA issued RODs for the two landfills in September, 1990, which required the excavation of contaminated soils, replacement and capping with clean soil, cleaning and removal of large refuse items. The contaminated soil and drums were incinerated at the Vertac site. EPA began remedial work at each site in 1994, and completed all work in 1995.

ANALYSIS

CERCLA was amended by the Superfund Amendments and Reorganization Act of 1986 ("SARA"). SARA added section 113(j) setting forth the standard for judicial review of a cost recovery action filed under Section 107.

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(1) Limitation

In any judicial action under this chapter, judicial review of any issues concerning the adequacy of any response action taken or ordered by the President shall be limited to the administrative record. Otherwise applicable principles of administrative law shall govern whether any supplemental materials may be considered by the court.

(2) Standard

In considering objections raised in any judicial action under this chapter, the court shall uphold the President's decision in selecting the response action unless the objecting party can demonstrate, on the administrative record, that the decision was arbitrary and capricious or otherwise not in accordance with law.

42 U.S.C. § 9613(j).

In performing this narrow review, the Court

looks to whether the agency considered those factors Congress intended it to consider; whether the agency considered factors Congress did not intend it to consider; whether the agency failed entirely to consider an important aspect of the problem; whether the agency decision runs counter to the evidence before it; whether there is

> such a lack of a rational connection between the factors found and the decision made that the disputed decision cannot "be ascribed to a difference in view or the product of agency expertise."

Downer v. United States, 97 F.3d 999, 1002 (8th Cir.1996).

Pursuant to Section 107(a)(4)(A) of CERCLA, defendants are liable for "all costs of removal or remedial action incurred by the United States government ... not inconsistent with the National Contingency Plan." 42 U.S.C. § 9607(a)(4)(A). Defendants have the burden of demonstrating that the United States' response costs are inconsistent with the NCP. Additionally, defendants must demonstrate that the EPA's choice of response actions was arbitrary and capricious or otherwise not in accordance with the law based on the administrative record. *United States v. Gurley*, 788 F.Supp. 1473, 1481 (E.D.Ark.1992), *aff'd in part, rev'd in part and remanded*, 43 F.3d 1188 (8th Cir.1994), *cert. denied*, 516 U.S. 817, 116 S.Ct. 73, 133 L.Ed.2d 33 (1995) (citing *United States v. Northeastern Pharmaceutical (NEPACCO)*, 810 F.2d 726, 748 (8th Cir.1986), *cert. denied*, 484 U.S. 848, 108 S.Ct. 146, 98 L.Ed.2d 102 (1987)). "To show that the Government's response action is inconsistent with the NCP, a defendant must demonstrate that the EPA acted arbitrarily and capriciously in choosing a particular response action to respond to a hazardous waste site." *United States v. Hardage*, 982 F.2d 1436, 1442 (10th Cir.1992), *cert. denied*, 510 U.S. 913, 114 S.Ct. 300, 126 L.Ed.2d 248 (1993) (citing *NEPACCO*, 810 F.2d at 748).

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Both Uniroyal and Hercules contend that even under the deferential "arbitrary and capricious" standard of review the Court must take a "hard look" at the administrative record. Under this approach, defendants argue that the Court must determine whether EPA used the correct methodology, applied the proper criteria, considered relevant factors, chose from the range of options, relied upon appropriate policies, and found adequate support in the record for material empirical propositions.

Defendants have confused the "hard look" required of agencies in making decisions with the standard of review a federal court must apply in reviewing an agency decision. *See Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374, 109 S.Ct. 1851, 104 L.Ed.2d 377 (1989) (National Environmental Policy Act of 1969 (NEPA) requires that *agencies* take "hard look" at the environmental effects of their planned action); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 356, 109 S.Ct. 1835, 104 L.Ed.2d 351 (1989); *Sierra Club v. U.S. Forest Service*, 46 F.3d 835, 838-39 (8th Cir.1995) (under arbitrary and capricious standard, court must affirm agency's decision if the *agency* took a "hard look" at the project); *Audubon Soc'y of Cent. Arkansas v. Dailey*, 977 F.2d 428, 434 (8th Cir.1992) (whether agency took "hard look" at the problem is factor to be considered by court in determining whether agency's decision is arbitrary and capricious).

The Court will not expand the standard of review to be used in reviewing EPA's actions in this instance. That standard is clearly spelled out in the CERCLA statute. Furthermore, as the Eighth Circuit stated in *NEPACCO*,

Because determining the appropriate removal and remedial action involves specialized knowledge and expertise, the choice of a particular cleanup method is a matter within the discretion of the EPA. The applicable standard of review is whether the agency's choice is arbitrary and capricious. As explained in *United States v. Ward*,

> [i]f [appellants] wish the court to review the consistency of [the government's] actions with the NCP, then they are essentially alleging that the EPA did not carry out its statutory duties. The statute provides liability except for costs "not inconsistent" with the NCP. This language requires deference by this court to the judgment of agency professionals. [Appellants], therefore may not seek to have the court substitute its own judgment for that of the EPA. [Appellants] may only show that the EPA's decision about the method of cleanup was "inconsistent with the NCP in that the EPA was arbitrary and capricious in the discharge of their duties under the NCP".

810 F.2d at 748 (quoting *United States v. Ward*, 618 F.Supp. 884, 890 (E.D.N.C.1985)). *See also United States v. Akzo Coatings of America, Inc.*, 949 F.2d 1409, 1424-25 (6th Cir.1991) (reviewing court should not attempt to substitute its judgment for the expertise of EPA officials; task is to search for errors of procedure and serious omissions of substantive evidence, not to reformulate a scientific clean-up program developed over the course of months or years).

Appendix D

Defendants raise a number of issues in support of their position that the United States is not entitled to its costs. The Court will address each of these before deciding the United States' motion for summary judgment on costs.

Cancer Potency Factor

Hercules contends that EPA used too conservative a cancer potency factor in the calculation of dioxin cleanup standards for the soil and sediments at the Vertac site. EPA states that it considered lower standards, and selected the 1 ppb cleanup standard for the off-site residential areas in 1990 and the 5 ppb cleanup standard in the 1996 OU # 2 ROD for the on-site areas in which future industrial use could be expected. The cancer potency factor used by EPA was fully explained in the RODs for the Off-site areas and for OU # 2, in risk assessments performed for the site, and in an extensive scientific research document issued by EPA in 1985 (Health Assessment document). It specifically considered Hercules' comments, as well as the proposal of Hercules' contractor, ChemRisk.[8] The cancer potency factor was subjected to peer review, discussed in a public forum, and reviewed and approved by the EPA's independent Science Advisory Board.

> In selecting remedial actions, the EPA is directed to establish acceptable exposure levels that are protective of human health and the environment

8. ChemRisk suggested that EPA use a lower cancer potency factor based on its evaluation of some new scientific papers that had been issued subsequent to EPA's Health Assessment. ChemRisk proposed cleanup standards of 28 ppb for residential areas and 113-209 ppb for industrial areas.

> and shall be developed by considering the following . . . [f]or systemic toxicants, acceptable exposure levels shall represent concentration levels to which the human population, including sensitive subgroups, may be exposed without adverse effect during a lifetime or part of a lifetime, incorporating an adequate margin of safety.

40 C.F.R. § 300.430(e)(2)(i).

EPA chose to use a cancer potency factor premised on the most conservative assumption, which it opined would provide the greatest protection for the public health and the environment. In light of the scientific uncertainty about a "safe level" for dioxin, EPA's choice was reasonable. While Hercules may disagree with EPA's more conservative number, the Court cannot say that the EPA's decision to use the standards it did was in any way arbitrary, capricious or not in accordance with the law.[9]

Hercules also argues that the EPA's cancer potency factor constitutes a rule under the Administrative Procedures Act (APA) that must be overturned because it was not subject to notice and comment. Courts have established a two-part test to determine whether a particular statement by an agency is a legislative rule or policy: (1) a policy statement, as opposed to a rule, does not have binding effect, that is, it does not impose any rights and obligations, and (2) a policy genuinely

9. As the Court has previously stated, it will not turn the cost phase of the proceedings into a scientific debate over the dangers of dioxin.

leaves the agency and its decision makers free to exercise discretion. *McLouth Steel Products Corp. v. Thomas*, 838 F.2d 1317, 1320 (D.C.Cir.1988) (citations omitted). *See Syncor Int'l Corp. v. Shalala, 127 F.3d 90, 94 (D.C.Cir.1997)* (primary distinction between rule and general statement of policy turns on whether agency intends to bind itself to a particular legal position).

The Health Assessment Document which set forth the cancer potency factor does not impose any rights of obligations. It is at most only a technical and advisory report. It did not obligate the agency or public in determining acceptable risks associated with dioxin. *See Industrial Safety Equipment Assoc., Inc. v. EPA*, 837 F.2d 1115, 1120-21 (D.C.Cir.1988) (guide by EPA and NIOSH recommending certain respirators did not constitute rule). *See also Natural Resources Defense Council, Inc. v. EPA*, 16 F.3d 1395, 1406-07 (4th Cir.1993) (EPA water quality dioxin criteria document is scientific reference manual and useful guide, but is not binding on any agency and has no legal effect).

With regard to the second element, the Regional Administrator of EPA Region 6 exercised discretion in deciding whether to apply the cancer potency factor to the cleanup of the site. EPA considered the effects of the lower figure proposed by ChemRisk and rejected it. Furthermore, in 1996, the Regional Administrator also reevaluated the toxicity of dioxin based on a 1994 draft Dioxin Reassessment Document. While she ultimately did not select a different cancer potency factor, her consideration of other data establishes that she was not bound by the 1985 document or the cancer potency factor set forth in it.

In addition, Hercules had the opportunity to, and did, comment on EPA's application of the cancer potency factor with regard to the cleanup levels at the site. EPA considered and responded to those comments when issuing its final RODs.

This argument is without merit.

Exposure Assessments

Hercules argues that the exposure assessments used by EPA did not justify a remedial order. Hercules throws out numbers and absurd hypotheticals to support its contention. For example, Hercules posits that EPA's assessments are based on teenagers riding their bicycles on the landfills or people rooted all day to a portion of the sewage treatment plant, eating dirt by the handful. Hercules argues that EPA used "unrealistic" exposure assumptions along with its cancer potency factor to create imaginary risks to justify a remedial order.

For known or suspected carcinogens, acceptable exposure levels under the NCP "are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response." 40 C.F.R. § 300.430(e)(2)(i)(A)(2). There is no requirement that a certain number of people be exposed. Rather, the NCP requirement is designed to protect an individual from an increased risk of contracting cancer as a result of exposure to hazardous substances. The numbers may be high, and perhaps, as Hercules implies, a bit overcautious, but the Court

cannot find that the assessments are arbitrary and capricious. They are based on observations, discussions with local officials and residents, and review of zoning ordinances. According to reports from site evaluations in the residential areas, children routinely played in the Rocky Branch creek, some of the flood plain areas were used for grazing and crop production, sludge drying beds were being used for vegetable gardens, and a mobile home was located within 1000 feet of the highly contaminated dioxin drums.

EPA was justified in assuming that residents could be exposed to dioxin contaminants from the site. As such, the Court finds that EPA's exposure assessments and cleanup standards were not arbitrary and capricious.

Risks to Workers

In a somewhat innovative, yet unpersuasive, argument, Hercules contends that the remedies were not "cost effective" because EPA failed to consider the risks of injuries and fatalities to workers involved in response activities. According to Hercules, the risk of death to workers involved in the clean up was greater than the risk of death by possible exposure to dioxin.

Hercules cannot point to anything in the Administrative Record to show that EPA did not consider worker safety. Furthermore, assessment of the risks associated with traveling to and working at the Site is not required by the NCP in determining whether the remedial choice is "cost effective."

Appendix D

Incineration of Drummed Wastes

The main argument advanced by both Uniroyal and Hercules is that EPA arbitrarily and capriciously characterized, handled and incinerated the 2,4-D waste. The arguments are basically two-fold: first, that the EPA's decision to treat the drums of 2,4-D waste as F-listed wastes was arbitrary and capricious, and concomitantly, that the EPA arbitrarily and capriciously decided to incinerate the waste; second, that EPA's determination to treat incineration as a removal action rather than remediation was inconsistent with the NCP.

Characterization of the Wastes

In 1980, EPA concluded that the 2,4-D wastes had been contaminated with tetrachlorodiabenzo-o-dioxin ("TCDD"). On February 26, 1980, EPA issued a proposed rule under the Toxic Substances Control Act ("TCSA") to prevent Vertac from disposing of TCDD wastes from the Jacksonville site. The rule became effective March 11, 1980. (45 Fed.Reg. 15592) (proposed Feb. 26, 1980). This regulation, known as the "Vertac Rule," became final in May 19, 1980 (45 Fed.Reg. 32676).

According to testimony at the hearing on the proposed rule, Vertac had approximately 3,200 drums of TCDD-containing wastes resulting from the production of 2,4-D. The wastes contained "TCDD because the equipment used to produce 2,4-D had been used previously to produce 2,4,5-T and the equipment remained contaminated with TCDD after production shifted from 2,4,5-T to 2,4-D." 45 Fed.Reg.

32677. "Vertac testified that it had analyzed three samples from the 700 drums of wastes resulting from the initial production of 2,4-D on the contaminated equipment and found TCDD levels of approximately twenty parts per billion (ppb)." 45 Fed.Reg. 32678.

The 1980 Vertac Rule provided that wastes could be disposed of in a PCB landfill if the wastes contained no "detectable levels of TCDD employing the TCDD detection methodology established by the Dioxin Monitoring Program." 45 Fed.Reg. at 32687. Vertac then sent samples of its 2,4-D wastes to Wright State University and to Monsanto for testing. The analyses by Wright State University found the first 700 drums contained 0.7 ppb 2,3,7,8-TCDD, 1.2 ppb total TCDD. Monsanto was not able to detect any TCDD at limits of detection below 1 ppb.

On April 4, 1983, EPA issued a proposed rule (48 Fed.Reg. 14514) stating its intent to regulate under RCRA "certain chlorinated dioxins, - dibenzofurans, and-phenols," and to terminate the TCSA listing made in 1980. The materials were considered acutely hazardous and designated as F-listed wastes. The Final Rule, published at 50 Fed.Reg.1978 (January 16, 1985) became known as the "Dioxin Listing Rule." The materials contained in the Rule would be the "F-Listed" wastes which ultimately ended up being listed 40 C.F.R. § 261 App. VII.

Thus, in 1985, the wastes from the production of 2,4-D at the site became F-listed hazardous wastes, designated as F023.

Appendix D

Defendants contend that the 2,4-D wastes were not properly characterized as F-listed wastes. The Court disagrees. The 2,4-D wastes fall within the category F023. That category includes:

> Wastes . . . from the production of materials on equipment previously used for the production or manufacturing use . . . of tri- and tetrachlorophenols.

40 C.F.R. § 261.31.

There is no dispute that 2,4,5-T wastes were highly contaminated with hazardous substances including 2,3,7,8-TCDD. Equipment used to make 2,4,5-T was also used to make 2,4-D. Thus, the wastes generated were F-listed wastes, regardless of the presence of dioxin. Furthermore, the Court has already found that there was cross-contamination between the 2,4-D and 2,4,5-T wastes and that the equipment was contaminated even after Vertac abandoned the facility. *United States v. Vertac Chemical Corp.*, 966 F.Supp. at 1500.

The Hazardous and Solid Waste Amendments of 1984 ("HSWA") to RCRA, prohibited the land disposal of untreated hazardous wastes after specified dates. As of November 8, 1986, land disposal of dioxin containing hazardous waste number F023 was prohibited. 42 U.S.C. § 9624(e)(2)(A). However, the statute contained a temporary exemption through November 8, 1988, for disposal of contaminated soil or debris from a CERCLA response action. 42 U.S.C. § 9624(e)(3). Thus, after November 8, 1988, no

F023 could be land disposed unless it met standards set by EPA.[10]

Under the standards set by EPA, F023 hazardous waste could not be land disposed unless the concentration of each constituent designated in the standard fell below certain levels. 40 C.F.R. § 268.40. These constituents can be just as toxic as dioxin. Wastes that met the applicable treatment standards could be disposed in a RCRA Subtitle C land disposal facility.[11]

The 2,4-D waste contained most of the constituents in concentrations greater than the treatment requirements. For example, the analysis of a composite sample from the 700 drums conducted in late 1979 showed total TCDDs of 1.2. ppb, above the treatment requirement of one ppb. Samples collected on July 21, 1990, as part of the first trial burn for the on-site incinerator revealed total TCDFs (tetrachlorodiabenzo-p-furans) in excess of the treatment standard for F023. In addition, one sample contained 320 ppb total TCDDs.

Data from the 1991 test burn showed the presence of 12.6 ppb 2,3,7,8-TCDD in the solid fraction of 2,4-D waste

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10. Uniroyal argues that EPA could have sent the drums to a landfill prior to the November, 1988 date. However, no facility would accept the waste, nor were containers available to ship it. Furthermore, EPA had not even finished stabilizing the drums.

11. There is no treatment standard for 2,3,7,8-TCDD itself. The treatment standard is for total TCDDs. Thus, a waste with no 2,3,7,8-TCDD but with total TCDDs greater than one ppb cannot be land disposed.

(13.9 ppb total TCDDs) and 3.6 ppb 2,3,7,8-TCDD in the liquid fraction (10.6 ppb total TCDDs) analyzed. In addition, other constituents were present in the 2,4-D waste in excess of the treatment requirement for the constituents.

Uniroyal further argues that because all the drums of waste were not sampled by EPA, it was arbitrary and capricious to treat all of the drums as F-listed wastes. EPA argues that the costs of sampling the drums would have been prohibitive. Each drum would have had to be opened in a special environment with specialized tools by workers dressed in protective gear. The drums would have to be resealed. The United States has demonstrated that the cost of such individualized sampling would rival the cost of incineration. Given what the EPA knew about the content of the drums at the time they were listed, it would have been unreasonable for the EPA to spend millions of dollars to sample drums in hopes of finding ones that did not contain hazardous substances. *See United States v. Broderick Inv. Co.*, 963 F.Supp. 951, 954 (D.Colo.1997) (record supported EPA's assertion that obtaining accurate measure of solid concentration would be prohibitively expensive and time consuming, if not practically impossible. "[M]andating every imaginable study prior to remedy [or removal] selection would hopelessly delay EPA's important activities, and the benefit of such an exacting requirement is unclear.")

All the data available to EPA supported its conclusion that the 2,4-D waste required treatment before it could be land disposed. EPA examined multiple treatment options for the drummed waste and concluded that incineration was the only effective option. EPA states as a result of incineration,

the 25,180 drums of 2,4-D wastes were reduced to 6,300 drums of ash and 33,000 drums of salt with no appreciable dioxin content. The ash could be treated and placed at RCRA Subtitle C landfill at minimal additional cost.

The Court concludes that the characterization of the D-wastes as F-listed was not arbitrary and capricious. Contrary to defendants' assertions, the 2,4-D wastes met the requirements of the F023 listing. Furthermore, the 2,4-D waste did not meet the treatment requirements for landfill offsite. Incineration was appropriate under the circumstances.

Response v. Remedial Action

Uniroyal and Hercules further argue that EPA did not follow the requirements of the NCP in disposing of the drummed wastes as a removal action. EPA performed the work as a series of removal actions. This is permitted by the NCP and CERCLA. The United States contends that the incineration is a removal action, and that the requirements of the NCP for remedial actions do not apply.

Whenever there is a release or threat of release of any hazardous substance into the environment, Section 104 of CERCLA authorizes EPA to take response measures not inconsistent with the NCP. 42 U.S.C. § 9604(a). There is no dispute that there was a release of hazardous substances at the Site, as was previously found by the Court.

Appendix D

CERCLA and the NCP distinguish between removal actions and remedial actions.[12] The former are taken to "counter imminent and substantial threats to public health and welfare," while the latter "are longer term, more permanent responses." *State of Minnesota v. Kalman W. Abrams Metals, Inc.*, 155 F.3d 1019, 1024 (8th Cir.1998). "The NCP prescribes more detailed procedures and standards

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12. CERCLA defines removal actions as:

> the cleanup or removal of released hazardous substances from the environment, such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment, such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release.

42 U.S.C. § 9601(23).

Remedial actions are defined as:

> actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment.

42 U.S.C. § 9601(24).

for remedial actions" than for removal actions. *Id. See* 40 C.F.R. §§ 300.410, 300.415 (requirements for removal actions); 40 C.F.R. §§ 300.420-300.435 (requirements for remedial actions). "However, a removal action is not converted into a remedial action just because it effects a permanent remedy." *Hatco Corp. v. W.R. Grace & Co.*, 849 F.Supp. 931, 962 (D.N.J.1994). The proper classification of the cleanup is an issue of law. *Channel Master Satellite v. JFD Electronics Corp.*, 748 F.Supp. 373, 386 (E.D.N.C.1990).

EPA is authorized to perform removal actions where it determines that "there is a threat to public health or welfare of the United States or the environment." 40 C.F.R. § 300.415(b)(1). The NCP requires that EPA consider eight factors in determining the appropriateness of a removal action. These are:

> (i) Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants;
>
> (ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;
>
> (iii) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

(vi) Threat of fire or explosion;

(vii) The availability of other appropriate federal or state response mechanisms to response to the release; and

(viii) Other situations or factors that may pose threats to public health or welfare or the environment.

40 C.F.R. § 300.415(b)(2) (1990).[13]

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13. EPA's decision to utilize its removal action authority must be judged by the NCP in effect at the time the action was taken. *See United States v. Chapman*, 146 F.3d 1166, 1170 n. 3 (9th Cir.1998). When EPA began its removal action, the 1985 NCP was in effect. *See* 50 Fed.Reg. 47912 (1985). On April 4, 1990, revisions to the NCP went into effect (the 1990 NCP). *See* 50 Fed.Reg. 8666 (1990). While the 1985 NCP was substantially revised by the 1990 NCP, the core requirements with regard to removal actions remained substantially the same. In the 1985 NCP, the factors to be considered in determining the appropriateness of a removal action are set forth in 40 C.F.R. § 300.65(b)(2), and the only difference is the first factor which is stated in the 1985 NCP as follows: "Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chain."

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When EPA decides to perform a removal action, it documents that decision in an "Action Memorandum" which sets forth the basis for the agency's determination that a threat exists and for the particular removal action selected. EPA also writes Action Memoranda to document a modification of the removal action or the need for additional financing or time.

The action memoranda reveal that before the drums were stabilized EPA was concerned with the risk of fire and explosion, tornadoes, exposure of nearby residents and the environment to the hazardous substances, and the release of contaminants to the soils. These threats, and EPA's concern about them, continued even after completion of the drum stabilization. According to EPA, the mere presence of the drums posed threats of fire and explosion and release of hazardous substances to nearby residents.

Incineration as a removal action was consistent with the NCP. The 1985 NCP, under which EPA stabilized the drums and supported the State incineration efforts, contains the following suggested removal actions: "[r]emoval of drums, barrels, tanks, or other bulk containers that contain or may contain hazardous substances or pollutants or contaminants-where it will reduce the likelihood of spillage, leakage, exposure to humans, animals or food chain, or fire or explosion." 40 C.F.R. § 300.65(c)(7) (1986). The 1990 NCP, under which EPA took over the incineration of the wastes, contains the same suggestions as the 1985 NCP with the addition of the following: "[C]ontainment, treatment, disposal, or *incineration* of hazardous materials-where needed to reduce the likelihood of human, animal, or food

chain exposure." 40 C.F.R. § 300.415(d)(8) (1990) (emphasis added).

EPA issued fifteen Action Memoranda for the drum removal action at the site. EPA consistently emphasized the threat of tornados and fire and explosion.

Removal actions, although of shorter duration, do not have to be. Pursuant to 40 C.F.R. § 300.415(b)(5), removals that will take more than a year or cost more than $2 million to complete are permitted where "there is an immediate risk to public health or welfare or the environment." *See* 42 U.S.C. § 9604(c)(1). In each of the Action Memorandum, EPA made the required findings.

Requiring EPA to use the remedial action process would have delayed the removal of the threat posed by the drums. A remedial action requires a long detailed RI/FS process which may take years to complete. The drums posed an imminent threat, that needed immediate response.

Uniroyal argues, however, that the time removal was chosen (1987) until the actual incineration of the 2,4-D waste was begun (1993) belies the government's argument that the action was taken in response to an immediate threat to public health. Uniroyal contends that within that time frame, EPA would have had an opportunity to do an RI/FS resulting in remedial action after full consideration of disposal alternatives.

Uniroyal's argument is without merit. It ignores the State's incineration efforts. EPA did not sit on its hands during

that period of time. The record reflects that it performed a number of response actions to deal with the leaking drums, including overpacking, as well as provided support to the State's incineration efforts. The incineration of the drums encountered significant delays, including lawsuits and problems with the trial burn.

"Even if the Court would have made a different decision regarding the proper action to be taken, the decision of the EPA will not be found to be inconsistent with the NCP unless it is in contravention of the NCP guidelines. Courts are required to uphold the EPA's response decision 'unless the objecting party can demonstrate, on the administrative record, that the decision was arbitrary, capricious or otherwise not in accordance with the law.'" *EPA v. TMG Enterprises*, 979 F.Supp. 1110, 1127 (W.D.Ky.1997) (citations omitted). The term "removal action" is to be given a broad interpretation. *Kelley v. E.I. DuPont de Nemours & Co.*, 17 F.3d 836, 843 (6th Cir.1994).

Here, performing a removal action with regard to the drums enabled EPA to quickly address and to mitigate the threat posed to human health and the environment by the leaking, deteriorating drums of acutely hazardous waste left behind by Vertac. The drums remained an imminent threat. After EPA's arrival at the site in 1987, it took about 19 months to overpack and stabilize the drums. Even after being overpacked, continuous drum monitoring and maintenance were required as drum failures continued to occur. Furthermore, the fire and exposure threat remained, as did the threat presented by tornados. Incineration was specifically contemplated as an appropriate removal action. *See General*

Electric Co. v. Litton Indus. Automation Systems, Inc., 920 F.2d 1415, 1419 n. 4 (8th Cir.1990), *cert. denied*, 499 U.S. 937, 111 S.Ct. 1390, 113 L.Ed.2d 446 (1991) (NCP specifically contemplates excavations as appropriate removal actions).

The Court must defer to the expertise of the governmental agency. Thus, EPA's decision to take removal action in response to an immediate threat is entitled to the deference accorded decisions by a governmental agency. *Akzo*, 949 F.2d at 1424-1425.

Defendants cite a number of cases in support of their position that the use of a removal action rather than a remedial action was not in accordance with the NCP. However, in those cases there was no finding by a governmental agency of an immediate threat. *See Sherwin-Williams Co. v. City of Hamtramck*, 840 F.Supp. 470, 475-76 (E.D.Mich.1993) (city did not demonstrate imminent threat to health or safety and extended and protracted nature of cleanup indicated that city had engaged in remedial action); *Channel Master Satellite Sys., Inc. v. JFD Elecs. Corp.*, 748 F.Supp. 373, 384-86 (E.D.N.C.1990) (site did not pose immediate risk of harm to public health or environment). *See also Minnesota v. Kalman W. Abrams Metals, Inc.*, 155 F.3d 1019, 1998 WL 635550 (8th Cir. Sept.17, 1998) (state's action did not qualify as removal and state would be held to NCP standards for remedial action because of state's failure to make determination required by § 300.415(b) of the NCP of threat to public health or welfare or the environment, permanent nature of the site cleanup and the leisurely manner in which state dealt with the problem site).

In sum, the Court finds that EPA appropriately performed the response action as a series of removal actions to mitigate the imminent threat posed by the leaking drums. The administrative record adequately documents the continuing risk to human health and environment of the drummed wastes. *See TMG Enterprises*, 979 F.Supp. at 1130 (length of time or permanency of remedy does not preclude finding that EPA conducted a removal action at the sites). The incineration of the drummed wastes was not arbitrary or capricious and was in accordance with the NCP.

Constitutionality of CERCLA

In one final effort to avoid liability for costs, Uniroyal and Hercules argue that the Court must reexamine the constitutionality of CERCLA in light of the Supreme Court decision in *Eastern Enterprises v. Apfel*, 524 U.S. 498, 118 S.Ct. 2131, 141 L.Ed.2d 451 (1998). In that case four justices concluded that the retroactive provisions of the Coal Industry Retiree Health Benefit Act of 1992 (the Coal Act), as applied to Eastern Enterprises, violated the Takings Clause of Fifth Amendment. Justice Kennedy concluded that the Coal Act, as applied, violated the Due Process Clause of the Fifth Amendment.

Defendants argue that *Eastern Enterprises* calls into question the retroactive application of CERCLA. They contend that they did not cause harm and therefore cannot be held to pay the costs of the cleanup associated with harms they did not cause or create. It is clear that defendants want to relitigate liability. They cannot do so. They have been found jointly and severally liable under CERCLA for the costs of the cleanup.

Appendix D

The Court has previously found CERCLA constitutional in the face of a retroactivity argument by Hercules. There is no basis to warrant reconsideration of the constitutionality of CERCLA. Both Uniroyal and Hercules have been found liable for the contamination at the Site. Therefore, they are responsible, jointly and severally, for the costs of the cleanup. *See NEPACCO*, 810 F.2d at 732-734 (retroactive application of CERCLA to impose liability for cost of cleanup not unconstitutional). *See also United States v. Olin Corp.*, 107 F.3d 1506, 1511-1515 (11th Cir.1997) (same). *Eastern Enterprises* is not applicable.

Government's Request for Costs

CERCLA provides that responsible persons are liable for "all costs of removal or remedial action incurred by the United States Government . . . . not inconsistent with the [NCP]." 42 U.S.C. § 9607(a). The government seeks reimbursement of response costs from defendants in the amount of $102,878,641.35 including prejudgment interest, plus any additional response costs incurred by the United States through the date of judgment.[14]

In support of its motion for summary judgment, the government submitted the affidavits of Rick Ehrhart, Phillip Allen, and Kathleen Aisling. All three individuals are

14. The figure includes principal and interest incurred through July 31, 1997. Amounts included for the Jacksonville and Rogers Road Municipal Landfill sites are not applicable to Uniroyal. The total amount will also be subject to set off by any amounts collected by the government pursuant to prior settlements and various trust accounts associated with the Vertac site.

Remedial Project Managers (RPM) at the site and have personal knowledge regarding the response actions.

Defendants have moved to strike the affidavits of Ehrhart, Allen and Aisling on the basis that they contain matters beyond the administrative record, are inadmissible hearsay and are irrelevant.

The government states that the affidavits are admissible as summaries under Fed.R.Evid. 1006. The RPMs can also present testimony based on their personal knowledge of the actions taken as well as EPA practices.

The affidavits essentially summarize the actions taken as set forth in the administrative record and state that costs were incurred. Thus, they constitute summaries under Fed.R.Evid. 1006. They do not contain inaccurate or misleading information. The Court finds them relevant and admissible. To the extent they contain conclusions on matters that are left to the Court (such as a declaration that EPA followed the requirements of the NCP), the Court has disregarded those portions.[15]

Therefore the motions to strike the affidavits of the RPMS are denied.

Defendants do not dispute that EPA incurred costs. They have primarily argued that the actions taken by EPA were

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15. The Court agrees with Uniroyal and Hercules that the affidavits are not admissible as expert testimony under Fed.R.Evid. 702.

arbitrary, capricious and not in accordance with the NCP.[16] The Court has rejected those arguments, finding that EPA's actions were reasonable, and not inconsistent with the NCP.

Congress intended that the government recover all costs incurred in a remedial or removal action. "As long as the government's choice of action was not inconsistent with the NCP, its costs are presumed to be reasonable and therefore recoverable." *Hardage*, 982 F.2d at 1443. "The only way a responsible party can escape liability for the government's costs incurred at a particular site is to demonstrate that the government's response actions-i.e., removal or remedial actions-underlying the costs are inconsistent with the NCP." *Id.* As discussed above, defendants have failed to meet their burden of showing that the actions were not consistent with the NCP and therefore that costs are not recoverable.

CERCLA provides for the recovery of *all* costs incurred by the United States not inconsistent with the NCP. 42 U.S.C. § 9607(a). *See NEPACCO*, 810 F.2d at 747-48. These include recovery for cost of investigating and monitoring the site; costs of designing and implementing removal and remedial actions; legal and enforcement expenses incurred in seeking to recover costs from a responsible party; and prejudgment

16. For example, Hercules has submitted a 110-page statement of material facts in dispute regarding the United States' claim for costs. Almost all the facts in dispute pertain to Hercules' arguments that EPA's choices were arbitrary and capricious. With respect to the specific issue of costs, Hercules contends that certain ADPC & E and RCRA costs are not recoverable and that costs associated with actions by Department of Justice's attorneys in litigation against the Phoenix parties are not recoverable. These latter two issues will be discussed *infra*.

interest. *See* 42 U.S.C. § § 9601(23) and (24); 9604(a) and (b), 9607(a). The broad remedial purpose of CERCLA supports a liberal interpretation of recoverable costs, both indirect and direct costs are recoverable. *United States v. R.W. Meyer, Inc.*, 889 F.2d 1497, 1503-1504 (6th Cir.1989), *cert. denied*, 494 U.S. 1057, 110 S.Ct. 1527, 108 L.Ed.2d 767 (1990).

The government has requested costs (to date) as follows:

(a) Expenditures for contracts and other response costs in the amount of $76,256,312.35. These include work performed under federal contracts for activities such as the incineration of the wastes, handling, maintenance and storage of the drummed waste, sampling and laboratory analysis of samples from the site, remedial investigations, remedial planning, and feasibility studies, and community relations.

(b) EPA payroll and travel costs in the amount of $2,027,263.83.

(c) EPA indirect costs in the amount of $4,224,031.55. These include costs necessary to operate the Superfund program, but cannot be attributed directly to specific sites.

(d) State Cooperative Agreement costs in the amount of $205,503.00.

(e) Costs incurred by Agency for Toxic Substance and Disease Registry (ATSDR) in the amount of $927,661.59. ATSDR provides health studies and testing in the Vertac area communities affected by toxic substance contamination.

(f) Prejudgment interest in the amount of $17,332,509.10. Interest began accruing as of March 2, 1992, when the United States demanded payment of unreimbursed response costs incurred in connection with the site.

(g) Department of Justice (DOJ) costs in the amount of $1,904,759.93. These include payroll and travel costs, indirect costs, and prejudgment interest.

The total for costs incurred by the United States and prejudgment interest accrued is $102,878,641.35.

Hercules argues that the United States cannot recover any costs it reimbursed to ADPC & E as the State had settled its CERCLA claim against Hercules in a 1982 Consent Decree. Thus, any costs expended by ADPC & E cannot be charged to Hercules.

Hercules has failed to show how the settlement agreement between Hercules and the State is related to the costs the United States seeks from the State. They involve separate, unrelated matters, and the United States is entitled to recover its costs from the State.

Hercules also contends that certain costs are not recoverable because they are RCRA costs. The United States contends that all costs charged to the site are recorded under Superfund appropriation codes, and all enforcement activities taken were properly identified as CERCLA related costs. Hercules has not pointed to any specific item in the cost package which is a RCRA cost as opposed to a CERCLA cost. Thus, there is no basis to disallow any of the costs incurred prior to November 13, 1985.[17]

Hercules argues that the enforcement costs should be reduced to reflect DOJ attorney time spent on efforts to obtain a receiver for Vertac in the 1980s. Hercules contends that the attorneys' failure to obtain service over the Phoenix parties amounted to malpractice and resulted in the government agreeing to a "cheap" settlement with the Phoenix parties.

The Court disagrees. The government attorneys did not engage in misconduct, or malpractice. Ultimately, the Phoenix parties were brought into the action and the Court approved a settlement with them as "fair and reasonable." The government is entitled to recover the DOJ costs, including its attorney fees. *See United States v. Chapman*, 146 F.3d at 1176 (United States entitled to its reasonable attorney's fees).

In sum, defendants have failed to demonstrate that the costs incurred by the United States are inconsistent with the NCP. Thus, the United States is entitled to judgment against

17. The United States also notes that RCRA costs are recoverable under CERCLA *NEPACCO*, 810 F.2d at 737.

the defendants in the amount of $102,878,641.35 plus any additional response costs incurred and to be incurred in this case.

CONCLUSION

Accordingly, Hercules' motion for partial summary judgment (document no. 2273) is denied; Uniroyal's motion for partial summary judgment (document no. 2280) is denied; the United States' motion for summary judgment for costs against Hercules and Uniroyal (document no. 2283) is granted; Uniroyal's and Hercules' motions to strike the declarations of Ehrhart, Allen and Aisling (document nos. 2297 and 2301) are denied; and the United States' petition to exclude the expert testimony of Renate Dora Kimbrough (document no. 2337) is denied as moot. The allocation phase will begin November 2, 1998, at 9:30 a.m.

APPENDIX E — OPINION OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF ARKANSAS DATED MAY 21, 1997

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF ARKANSAS

Civil Nos. LR-C-80-109, LR-C-80-110.

UNITED STATES OF AMERICA,

Plaintiff and Counterclaim Defendant,

v.

VERTAC CHEMICAL CORP.,

Defendant, Counterclaimant, Cross Claimant, and Third Party Plaintiff,

and

HERCULES INCORPORATED,

Defendant, Cross Claim Defendant, Counterclaimant, Cross Claimant and Third Party Plaintiff,

and

THE DOW CHEMICAL COMPANY, VELSICOL CHEMICAL CORPORATION, BASF AKTIENGESELLSHAFT, BASF CORPORATION, UNIROYAL CHEMICAL, LTEE-LTD., STANDARD CHLORINE OF DELAWARE, INC. and FIVE JOHN DOES,

Third Party Defendants.

Appendix E

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY

v.

VERTAC CHEMICAL CORP.,

Defendant, Counterclaimant, Cross Claimant, and Third Party Plaintiff,

and

HERCULES INCORPORATED,

Defendant, Cross Claim Defendant, Cross Claimant; and Third Party Plaintiff,

and

THE DOW CHEMICAL COMPANY, VELSICOL CHEMICAL CORPORATION, BASF AKTIENGESELLSHAFT, BASF CORPORATION, UNIROYAL CHEMICAL, LTEE-LTD., STANDARD CHLORINE OF DELAWARE, INC. and FIVE JOHN DOES,

Third Party Defendants.

May 21, 1997

Appendix E

MEMORANDUM OPINION AND ORDER

GEORGE HOWARD, Jr., District Judge.

This case involves a 93-acre tract of land in Jacksonville, Arkansas known as the Vertac Site ("Vertac Site" or "Site").[1] As a result of the herbicide production at the Site, the land, buildings, equipment, groundwater, sewer lines, two sewage treatment plants, and floodplains and adjacent creeks became contaminated with 2,3,7,8-TCDD ("dioxin") and other chlorinated carbon compounds. The Vertac Site and Off-Site Areas[2] are on the National Priority List of Superfund cleanup sites established pursuant to Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), 42 U.S.C. § 9601 *et seq.*

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1. The history of the Vertac Site and Off-Site areas has been discussed in a number of decisions. *See United States v. Vertac Chemical Corp.*, 489 F.Supp. 870 (E.D.Ark.1980); *United States v. Vertac Chemical Corp.*, 588 F.Supp. 1294 (E.D.Ark.1984); *United States v. Vertac Chemical Corp.*, 671 F.Supp. 595 (E.D.Ark.1987), *vacated*, 855 F.2d 856 (8th Cir.1988); *United States v. Vertac Chemical Corp.*, 756 F.Supp. 1215 (E.D.Ark.1991), *aff'd* 961 F.2d 796 (8th Cir.1992); *O'Dell v. Hercules, Inc.*, 904 F.2d 1194 (8th Cir.1990); *United States v. Vertac Chemical Corp.*, 841 F.Supp. 884 (E.D.Ark.1993), *aff'd* 46 F.3d 803 (8th Cir.1995), *cert. denied*, 515 U.S. 1158, 115 S.Ct. 2609, 132 L.Ed.2d 853 (1995).

2. The Off-Site areas include Rocky Branch Creek sediments and floodplains, Bayou Meto sediments and floodplains, the Jacksonville old sewage treatment plant and west wastewater treatment plant, and the sewer collection lines.

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Procedural Background and History

The Vertac Site was originally developed by the United States government in the mid-1930's as a munitions factory. *United States v. Vertac Chemical Corp.*, 489 F.Supp. 870, 873 (E.D.Ark.1980). Sometime between 1946 and 1948, the Site, including the munitions buildings, was sold to a now defunct corporation known as Reasor-Hill Corporation ("Reasor-Hill"). Reasor-Hill made pesticides, including aldrin, dieldrin, and DDT at the Site.

In 1958, Reasor-Hill began the manufacture of phenoxy herbicides, primarily 2,4,5-trichlorophenoxyacetic acid ("2,4,5-T"), 2,4-dichlorophenoxyacetic acid ("2,4-D") and 2,4,5-trichloropropionic acid ("Silvex" or "2,4,5-TP"). *See Id.* at 873-4. During the Reasor-Hill years, waste water from the production process ran through two cooling ponds on the west side of the plant directly to Rocky Branch Creek. Reasor-Hill had no treatment to process the waste water. The amount of waste generated during that period of time is unknown.

In 1961, Hercules, Inc. ("Hercules") bought the Jacksonville facility from Reasor-Hill, and continued the production of phenoxy herbicides, including 2,4,5-T, 2,4-D, and 2,4,5-TP. Hercules operated the plant until 1971. Shortly after it acquired the plant site from Reasor-Hill, Hercules buried drums of chemical waste left over from the Reasor-Hill operations on the Site.

From 1964 through 1968, Hercules produced and supplied to the United States Department of Defense an

herbicide known as Agent Orange, used as a defoliant in Vietnam. *See United States v. Vertac Chemical Corp.*, 46 F.3d 803 (8th Cir.1995). Agent Orange is a 50/50 mix of the n-butyl esters of 2,4-D and 2,4,5-T. During the Agent Orange production process, dioxin is formed as a by-product.

Hercules learned of the presence of dioxin in 1965, and thereafter began testing for the presence of dioxin in its product. In that same year, Hercules began converting its method of production to a "toluene extraction" system. During the process, dioxin and other impurities that were extracted underwent a distillation process producing residue (stillbottoms) in which extremely high levels of dioxin were found. Hercules buried drums of toluene stillbottoms at the Site and disposed of them in the landfill areas.

There were numerous leaks and spills during the time that Hercules operated the plant. According to testimony at trial, the leaks and spills were a common occurrence. During the time it operated the plant, Hercules generated hazardous substances, including dioxin, 2,4-D, 2,4,5-T, and other chlorinated carbon-based chemicals which were disposed of at the Vertac Site and Off-Site areas through leaks, spills, drum burial, and other releases into the environment, including discharges through the Jacksonville sewage treatment plant. The Hercules operation resulted in contamination of soil, groundwater, equipment, tanks, sewer lines, the sewage treatment plants, and sediments and flood plains in Rocky Branch Creek and Bayou Meto.

In 1971, Hercules leased the facility to Transvaal, Inc. ("Transvaal") which later became Vertac Chemical Corp.

("Vertac"). Vertac continued to manufacture 2,4-D, 2,4,5-T and 2,4,5-TP along with other chemicals. In 1974, Transvaal began storing the barrels of toluene stillbottoms above ground. Vertac continued this practice. Some of the barrels corroded over time, allowing some of the waste to leak into the ground.

In 1979, the United States Environmental Protection Agency ("EPA") restricted 2,4,5-T and its production discontinued. In 1980, the Arkansas Department of Pollution Control and Ecology ("ADPC & E") and the United States of America on behalf of the Environmental Protection Agency ("EPA") filed separate suits against Vertac and Hercules seeking civil penalties and injunctive relief to abate the continuing discharge of toxic and hazardous wastes into the surrounding area.[3] The Court granted the governments' request for preliminary injunctive relief and ordered Vertac to undertake remedial action to arrest the chemical leakage from the disposal sites. *United States v. Vertac Chemical Corp.*, 489 F.Supp. 870 (E.D.Ark.1980).[4] Because Hercules had not been in possession or control of the plant site at the time of the lawsuit, the Court did not order Hercules to undertake any remedial actions. *Id.* at 888.

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3. The original complaint filed by the United States was brought pursuant to Section 7003 of the Resource Conservation and Recovery Act (RCRA), certain sections of the Clean Water Act and the Refuse Act.

4. The case was originally assigned to the Honorable Henry Woods, United States District Judge for the Eastern District of Arkansas. Judge Woods recused in October, 1989, and the case was assigned to the undersigned.

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The Court subsequently approved implementation of a negotiated remedial plan to deal with containment of wastes and monitoring. *United States v. Vertac Chemical Corp.*, 588 F.Supp. 1294 (E.D.Ark.1984). Vertac ceased all operations at its plant in 1986.

The generation of wastes during the operations of the Plant was inherent or unavoidable but there is no evidence as to the amount of wastes generated from production of 2,4,-D, 2,45-T, 2,4,5-TP and other products during the operations of the Vertac plant from the 1950s until it was shut down by Vertac in 1986. When Vertac abandoned the Site in January of 1987, there were over 28,000 drums of 2,4,5-T and 2,4-D on site and 194 bulk storage tanks containing waste material, including 2,4-D, 2,4,5-T and dioxin. The waste in the drums was corroding the drums. The drums and bulk storage tanks were leaking. There was contamination in the buildings on the Site.

Vertac ceased to perform the remedial actions required by the Consent Decrees approved by the Court. Concerned with Vertac's inaction and its financial solvency in light of the sale of its assets and businesses to Inter-Ag third parties, the EPA and ADPC & E petitioned the Court to enforce the Consent Decree and appoint a Receiver. The Court appointed a Receiver, who was given full authority to handle the business affairs of Vertac.[5]

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5. The Court's Findings of Facts and Conclusions of Law regarding the petition are reported in *United States v. Vertac Chemical Corp.*, 671 F.Supp. 595 (E.D.Ark.1987). The Eighth Circuit Court of Appeals vacated the decision because Inter-Ag had not been joined as a party to the action. 855 F.2d 856 (8th Cir.1988) (Table).

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Over time, additional parties were brought in as parties engaged in the search to find all parties who might be liable for environmental harm at the Vertac Site. Cross-claims, counter-claims, third party complaints, were filed, amended and amended again or supplemented.[6]

A number of parties settled and entered into consent decrees. On October 12, 1993, the Court granted summary judgment against Hercules and in favor of the United States finding that Hercules is jointly and severally liable to the United States for costs incurred and to be incurred by the United States in the remediation of the Vertac Site, the Off-Site Areas and two municipal landfills used by Hercules to dispose of hazardous substances.[7]

Vertac stipulated that it was an owner operator and is liable under Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2) for response costs at the Site areas, the Jacksonville Crane and Weatherford Residence Sites. It also stipulated that it is a liable person as described in Section 107(a)(3) of CERCLA with regard to the Off-Site areas. Pursuant to the parties' stipulation and consent for the entry of a partial judgment of liability against Vertac, the Court

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6. In addition to the original parties in the 1980 complaint, the following are among the parties involved at one time or another, in this action: Phoenix Capital Enterprises, Inc., C.P. Bomar, Jr., J. Randal Tomblin, Inter-Ag Corporation, Velsicol Chemical Corporation, BASF Aktiengesellshaft, BASF Corporation, the United States Department of Defense, Intercapital Industries, Uniroyal Chemical Ltd., Uniroyal Chemical, Ltee-Ltd., and Standard Chlorine of Delaware.

7. The Court found that the United States was not liable under CERCLA for its role in Agent Orange production. *See* 841 F.Supp. 884.

found Vertac liable under Section 107(a) of CERCLA, for response costs, including interest, incurred or to be incurred by the United States at the Vertac Site, the Off-Site areas, the Jacksonville Crane Site, and the Weatherford Site, so long as those costs are not inconsistent with the NCP.[8]

The case went to trial on the remaining claims. The claims of the United States, Hercules and ADPC & E against Uniroyal and Uniroyal's claim in contribution were tried in the first phase of the trial commencing on November 3, 1993, before the Court and an advisory jury.[9] The only issue to be resolved in this proceeding was whether Uniroyal's arrangement for Vertac to manufacture a product for Uniroyal out of material supplied by Uniroyal constituted an arrangement for disposal of hazardous substances within the meaning of CERCLA, Section 107(a)(3).

The jury returned a verdict finding Uniroyal liable to the United States, the ADPC & E, and Hercules under Section 107(a)(3) for the Vertac Site and Off-Site Areas. It did not find Uniroyal liable to Hercules for contribution under Section 113 but did find Hercules liable to Uniroyal for contribution under Section 113. The jury also found "divisibility" under the jury instruction proffered by Hercules.

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8. See partial stipulation and consent for the entry of partial judgment of liability against defendant Vertac Chemical Corporation, document no. 1964.

9. Prior to the submission of the case to the jury, ADPC & E dismissed its state law claims against Uniroyal.

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Hercules also brought an action against Standard Chlorine of Delaware, Incorporated ("SCD") seeking response costs and contribution pursuant to Sections 107 and 113 of CERCLA. The jury found SCD was not liable as an arranger.

Private Party Actions Under Section 107(a)

Before proceeding to the liability of Uniroyal and SCD, two preliminary matters must be addressed. Both Uniroyal and SCD ask that the Court dismiss Hercules' cost recovery claim under Section 107(a) against them. They argue that Hercules can only bring a contribution claim under Section 113(f) against them.

The basic difference between a Section 107(a) cost recovery cause of action as opposed to a contribution action under Section 113(f) is that in the former, Hercules as a Potentially Responsible Party ("PRP") or Responsible Party ("RP") seeks to hold defendants "jointly and severally" liable for total response costs, whereas in the latter the defendant can only be held liable for its portion of the total response costs, calculated according to "such equitable factors as the court determines are appropriate." *See* 42 U.S.C. § 9613(f) ("In resolving contribution claims, the court may allocate response costs among liable parties using such equitable factors as the court determines are appropriate.") The courts were initially divided as to whether a RP or PRP could sue another under Section 107. See *Stearns & Foster Bedding Co. v. Franklin Holding Corp.*, 947 F.Supp. 790, 798-801 (D.N.J.1996) (discussing cases). However, every court of appeals that has examined the issue has concluded that an

action brought by a PRP is a section 113 action for contribution. *See New Castle County v. Halliburton NUS Corp.*, 111 F.3d 1116, 1119-20 (3rd Cir.1997).

The Eighth Circuit Court of Appeals has not addressed the issue, although one court in this district has.[10] Judge Eisele, in a well-reasoned decision, found that claims between PRPs and RPs are contribution claims governed by Section 113. *Reynolds Metals Co. v. Arkansas Power & Light Co.*, 920 F.Supp. 991, 996 (E.D.Ark.1996). The Court agrees, and need not add to the verbiage on the subject. The claims brought by Hercules against SCD and Uniroyal are contribution claims governed by Section 113, and therefore the Court will dismiss Hercules' Section 107 claims against them.

Effect of Jury Verdicts

Also to be determined is the effect of the jury verdicts. The Court empaneled a twelve-person jury who rendered the verdicts discussed above.[11] Because the Court has determined

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10. In *Wolf, Inc. v. L. & W. Service Center, Inc.*, 1997 WL 141685 (D.Neb. Mar.27, 1997), the court further discusses the state of the law, including a divergence within the district courts in the Eighth Circuit. Based on the facts of the case, the court found that the plaintiffs, as landowners who had not contributed to the hazardous condition of the site, could pursue an action under Section 107.

11. The Verdict form for the Uniroyal segment reads, in relevant part, as follows:

> (1) Do you find that Uniroyal is liable to the United States and the State of Arkansas as an arranger for the disposal of hazardous substances at the Vertac Site?
>
> X Yes

(Cont'd)

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(Cont'd)

(2) Do you find that Uniroyal is liable to the United States and the State of Arkansas as an arranger for the disposal of hazardous substances in the off-site areas?

X Yes

(3) Do you find that Uniroyal is liable to Hercules as an arranger for the disposal of hazardous substances at the Vertac Site?

X Yes

(4) Do you find that Uniroyal is liable to Hercules as an arranger for the disposal of hazardous substances in the off-site areas?

X Yes

(5) Do you find that Uniroyal is liable to Hercules on Hercules' claim for contribution?

X No

. . . . .

(6) Do you find that Hercules is liable to Uniroyal on Uniroyal's claim for contribution?

X Yes

. . . . .

(7) Do you find that Uniroyal has established that its harm to the environment is reasonably distinguishable from the harm for which others are also liable?

X Yes

The Verdict form for the Standard Chlorine segment reads, in relevant part, as follows:

(Cont'd)

that the private parties are limited to contribution claims under Section 113(f), the only claims to be brought under Section 107 are those of the United States and ADPC & E.

It is well established that because a CERCLA cost recovery action constitutes an action for restitution, which lies in equity, no right to jury trial attaches to it. *United States v. Northeastern Pharmaceutical & Chem. Co., Inc.*, 810 F.2d 726, 749 (8th Cir.1986), *cert. denied*, 484 U.S. 848, 108 S.Ct. 146, 98 L.Ed.2d 102 (1987); *United States v. Mexico Feed and Seed Co. Inc.*, 729 F.Supp. 1250, 1254 (E.D.Mo.1990); *United States v. Conservation Chemical Co.*, 619 F.Supp. 162, 205 (W.D.Mo.1985). *See also Hatco Corp. v. W.R. Grace & Co.-Conn.*, 59 F.3d 400, 412 (3rd Cir.1995). The parties agree that the jury verdict as to Uniroyal's liability under Section 107 is advisory.[12]

The Seventh Amendment entitles parties to a jury trial in suits at common law. U.S. Const. Amend. VII. " 'Suits at

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(Cont'd)

1. We, the jury, find that Standard Chlorine is liable to Hercules for the arrangement for treatment or disposal of hazardous substances at the:

(A) Vertac plant site:

X No

(B) Offsite Areas:

X No

12. In *Gopher Oil Co., Inc. v. Union Oil Co.*, 955 F.2d 519 (8th Cir.1992), the trial court used an advisory jury for the claims brought under CERCLA and the state counterpart.

common law' refers to 'suits in which *legal* rights [are] to be ascertained and determined, in contradistinction to those where equitable rights alone [are] recognized, and equitable remedies [are] administered.' " *Chauffeurs, Teamsters and Helpers, Local No. 391 v. Terry*, 494 U.S. 558, 564, 110 S.Ct. 1339, 1344, 108 L.Ed.2d 519 (1990) (quoting *Parsons v. Bedford*, 3 Pet. 433, 437, 7 L.Ed. 732 (1830)).

The district courts are split as to whether a right to jury trial exists in Section 113(f) contribution claims. *Compare American Cyanamid Co. v. King Industries, Inc.*, 814 F.Supp. 209, 213-215 (D.R.I.1993) (no right to jury trial in contribution action) with *United States v. Shaner*, 1992 WL 154618, at *2-4 (E.D.Pa. June 15, 1992) (right to jury trial in Section 113 action)

Only one appellate court has addressed the issue. In *Hatco Corp. v. W.R. Grace & Co.-Conn.*, 59 F.3d 400 (3rd Cir.1995), the court, after reviewing the treatment of the common-law remedy of contribution in the 18th Century, the legislative history of CERCLA as well as the statutory language, found that "an action for contribution under section 9613(f)(1) is essentially equitable," and that there was no right to jury trial under § 9607 or § 9613. *Id.* at 414.

This does not end the inquiry as the parties argue that the jury verdicts on the contribution claims are binding because the private parties consented to a jury trial on those claims. Federal Rule of Civil Procedure 39(c) governs requests for jury trials in cases where the parties are not entitled to a jury trial as of right. *See Alexander v. Gerhardt Enterprises, Inc.*, 40 F.3d 187, 192 (7th Cir.1994). Here,

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Hercules and Uniroyal requested a jury trial on the contribution claims, and SCD did not object to the request. The Court granted the request.[13]

The Court finds that the private parties have consented to a binding jury verdict on the contribution claims. See *Thompson v. Parkes*, 963 F.2d 885 (6th Cir.1992) (finding parties had consented to jury trial on equitable claim); *Bereda v. Pickering Creek Industrial Park, Inc.*, 865 F.2d 49 (3rd Cir.1989)(same). Therefore, unless the evidence does not warrant sustaining the jury verdict on the claims (see discussion *infra*) the Court will enter judgment on the jury verdicts.

Uniroyal also argues that the jury verdict as to divisibility is binding. It asserts that the verdict is, for all practical purposes, one between Hercules and Uniroyal, each of whom requested a jury trial resulting in a trial by consent. Uniroyal is incorrect in its analysis. Divisibility of harm is a defense

13. In its Order of October 7, 1993, the Court stated as follows:

> A number of parties have requested a jury trial. Other parties have objected, arguing that the parties are not entitled to a jury trial on the issues pending. The Court has reviewed the submissions and will grant the request for a jury trial. A twelve-person jury will be empaneled, and will decide those issues which are properly to be decided by the jury and will act as an advisory jury with respect to the other issues. F.R. Civ.P 39(c).

In a footnote, the Court stated that it did not need to decide, at that time, which issues should be resolved by the jury. After the trial, the Court asked the parties to address the effect of the jury verdicts.

to joint and several liability, which is imposed with a finding of liability under Section 107(a) (see discussion *infra*). As there is no right to jury trial on the Section 107(a) claim, the jury finding with respect to divisibility of harm is not binding.

Arranger Liability of Uniroyal

In 1978 and 1979, Vertac and Uniroyal entered into tolling agreements for the production of 1.3. million pounds of 2,4,5-T from 1,2,4,5-tetrachlorobenzene ("TCB"). The arrangement between Uniroyal and Vertac was for Uniroyal to send TCB to Vertac for Vertac to use to convert into 2,4,5-T and ship back to Uniroyal.

Under these agreements, Uniroyal imported the TCB to be converted by Vertac into 2,4,5-T and Uniroyal used its own agent to purchase the material in Europe. Uniroyal paid the freight to and from the Vertac facility and paid Vertac a tolling fee to process the material. Uniroyal required Vertac to meet certain product specifications for the final 2,4,5-T produced for Uniroyal. The TCB supplied by Uniroyal was the key ingredient in the process and is known as a specialty chemical.

Uniroyal imported the TCB into the United States under a Temporary Import Bond ("TIB") to avoid the payment of duties or taxes. Each shipment of TCB had a different TIB number assigned to it, and Uniroyal paid no customs duties on any of those shipments. Instead, Uniroyal simply posted a bond in order to assure the United States Customs Office that the materials being imported would be processed and then exported within a specified period of time.

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Under this bond posted by Uniroyal, Uniroyal represented to the United States Custom Service that it would have the TCB processed into 2,4,5-T by Vertac, shipped to Canada within one year, and that it was not being imported for sale or any other purpose. According to the requirements of the TIB, the entity bringing the material, that is the TCB, into the United States (in this case Uniroyal) maintains ownership of the material throughout the transaction. Therefore, at all times, the TCB supplied to Vertac by Uniroyal for Vertac's production of the 2,4,5-T for Uniroyal was owned by Uniroyal.

Vertac did not purchase the TCB from Uniroyal and Vertac's records reveal that it did not charge Uniroyal for the TCB. Vertac charged Uniroyal a tolling fee to process the TCB into 2,4,5-T, which included payment for Vertac's cost to process the TCB and the cost for additional raw materials that Vertac added to the process. The agreements also provided for waste and spillage of the TCB during processing into 2,4,5-T by requiring Uniroyal to supply 1.01 pounds of TCB for each pound of 2,4,5-T.

Vertac accounted for the TCB material as Uniroyal's material throughout the manufacturing process. Vertac kept separate records tracking the receipt of Uniroyal's TCB, as well as separate records of its production runs of 2,4,5-T for Uniroyal. As further evidence that the TCB supplied to Vertac was Uniroyal's TCB, Uniroyal instructed Vertac to provide insurance for Uniroyal's TCB from the time the TCB arrived at the Vertac Site until the 2,4,5-T from Uniroyal's TCB was shipped back to Uniroyal.

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When Uniroyal became concerned with the financial condition of Vertac, Uniroyal arranged to rent a warehouse at the Site for separate storage of its material to facilitate the segregation and to protect its material from possible seizure from creditors. As a further means of protection, Uniroyal arranged to ship only small amounts of its material to Vertac to limit its losses in the event of seizure.

As further evidence of Uniroyal's ownership of the TCB throughout the process, it took the position during a dispute with U.S. Customs concerning whether Uniroyal and Vertac had violated the terms of the T.I.B., that practically all the 2,4,5-T received from Vertac was produced principally from Uniroyal's TCB, and that all the T.I.B. TCB would have been used to make Uniroyal's 2,4,5-T. Uniroyal relied upon Vertac's accounting records which formed the basis of Uniroyal's position, and which led to the conclusion by U.S. Customs that the greater part of the 2,4,5-T acid manufactured from Uniroyal's TCB was in fact exported back to Uniroyal.

When TCB is processed into 2,4,5-T, dioxin is generated. Uniroyal knew that the processing of TCB for production of 2,4,5-T generated dioxin. Furthermore, at the time the dioxin was generated during the production of Uniroyal's TCB into Uniroyal's 2,4,5-T, Uniroyal owned the material. Vertac removed the dioxin inherent in the production by washing trichlorophenol ("TCP"), a precursor chemical in the production of 2,4,5-T with toluene and distilling the toluene into waste "stillbottoms" which contained the dioxin. Thus, in addition to dioxin, TCB, TCP, and 2,4,5-T were generated, disposed of, and released during the processing of Uniroyal's materials.

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The stillbottom wastes were stored in 55-gallon drums and placed in the north field above the plant site. Over the years, the contents of the drums leaked into the surrounding soil and were carried by the rain into the cooling pond and Off-Site Areas, including Rocky Branch Creek. The drums deteriorated and had to be placed in larger drums and moved to a more secure area for storage.

During the remaining stages of the processing of Uniroyal's material into 2,4,5-T, leaks and spills occurred throughout the system on a daily basis. The TCP holding tanks, which would have contained Uniroyal's material, also leaked. In addition to contaminating the Vertac Site, the leaks and spills also contributed to contamination of the Off-Site Areas.

The exact amount of wastes generated and disposed of as a result of the Uniroyal-Vertac agreements is not known. Vertac stored over 3,000 drums of 2,4,5-T waste in the north field, some of which contained Uniroyal's waste.

The Remedial Investigation/Feasibility Study ("RI/FS") reports conducted for the Vertac Site indicate the presence of dioxin, 2,4,5-T, 2,4,5-TP, TCB, TCP, 2,4-D, among other hazardous substances in the surface soils, below surface soils, the sewer lines beneath the plant site, the buildings, equipment, tanks, pipes, vessels and the groundwater. The RI/FS reports also indicate that the groundwater contains a number of contaminants such as 2,4,5-T, 2,4-D, dioxin, toluene, and methanol. The RI/FS for the Off-Site Areas indicates the presence of dioxin in significant quantities in the Rocky Branch flood plains, the sewer lines, and the

sewage treatment plants. These contaminants result from the years of operation of the Vertac plant.

When Vertac abandoned the Site in January of 1987, there were over 28,000 drums of 2,4,5-T and 2,4-D stillbottom wastes at the Vertac Site and 194 bulk storage tanks. Some of these drums and tanks contained dioxin contaminated waste from the production of Uniroyal's 2,4,5-T. Testing of the drums reveals that there has been almost total commingling and cross-contamination of waste materials in the drums.

Although Vertac discontinued the production of 2,4,5-T in 1979, it continued to use the equipment until December, 1986, for the production of materials which did not generate dioxin. The equipment is contaminated with dioxin. The dioxin, TCB, TCP, and 2,4,5-T generated by Hercules and Vertac, including that generated for Uniroyal, are chemically indistinguishable and commingled in the soil, sediments, flood plains, sewer lines, drums, and equipment. All are hazardous substances within the meaning of CERCLA.

At the time of trial, about 15,000 drums of wastes, as well as contaminated equipment, soil and sediments remained at the Site. The 2,4,5-T drums are among those remaining. The evidence, therefore, shows that there have been releases of hazardous substances at the Vertac Site and that there is a continuing threat of release of hazardous substances at the Site. The United States, ADPC & E and Hercules have incurred response costs in treating the releases and threats of release.

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Liability Under Section 107(a)(3)

In order to prove liability, the plaintiffs must show that Uniroyal is an arranger; that a release or threatened release from a facility has occurred; that the plaintiffs have incurred response costs as a result; and that the costs were necessary and consistent with the national contingency plan. *Control Data Corp. v. S.C.S.C. Corp.*, 53 F.3d 930, 934 (8th Cir.1995).

There is no dispute that the Vertac Site is a facility within the meaning of CERCLA. The dioxin, TCP, TCB, and 2,4,5-T generated during the production process are hazardous substances within the meaning of CERCLA. The evidence further shows that there have been releases of hazardous substances at the Vertac Site and that there is a continuing threat of release of hazardous substances at the Site. The plaintiffs have incurred response costs in treating the releases and threats of release.

Uniroyal asserts that the jury was not instructed correctly, and therefore its finding of liability is erroneous. It argues that continuous and exclusive ownership of the raw materials, the work in process, and the finished product are required for arranger liability, and that plaintiffs have not met their burden of proving these elements.[14] Because the jury verdict

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14. With respect to Uniroyal's liability as an arranger, the jury was instructed:

> When two companies enter into an arrangement whereby one company which owns the raw materials furnishes

(Cont'd)

is advisory as to arranger liability under Section 107, the Court must make its own findings of fact and conclusions of law based on the evidence.[15]

The phrase "arranged for" is not defined in the statute.[16] "Congress has left this task to the courts, and the courts have

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(Cont'd)

> those raw materials to another company to be further processed into a product to be returned to the company furnishing the raw materials, and the generation of waste is inherent in that further process, that arrangement is an arrangement for disposal by the furnishing party under CERCLA. If you find from the evidence that the arrangement between Uniroyal and Vertac is an arrangement such as I have just described, you should find that the arrangement was an arrangement for disposal by Uniroyal.

15. Because the jury verdict was advisory with respect to liability under Section 107(a)(3), the correctness of the jury instruction given is not relevant. Thus, even assuming Uniroyal advances a meritorious argument that the jury instruction is incorrect in that it did not include all the elements of arranger liability as set forth in *Aceto*, the Court in its own analysis finds Uniroyal liable as an arranger. *See* factual findings, *supra* and conclusions, *infra*.

16. Section 107(a)(3) of CERCLA defines an arranger as:

> any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party

(Cont'd)

at times struggled with the contours of 'arranger' liability under § 107(a)(3)." *South Florida Water Management Dist. v. Montalvo*, 84 F.3d 402, 406 (11th Cir.1996).

The Eighth Circuit has given a liberal interpretation to "arranger" liability, given CERCLA's " 'overwhelmingly remedial scheme.' " *United States v. Aceto Agricultural Chemicals Corp.*, 872 F.2d 1373, 1381 (8th Cir.1989) (citations omitted).[17]

Aceto remains the leading authority in this Circuit on arranger liability. In that case, pesticide manufacturers hired a formulating company to mix and package pesticides for them. The complaint alleged that the manufacturers owned the technical grade pesticide alleged to be a "hazardous substance" under CERCLA, the work in process and the

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(Cont'd)

> or entity and containing such hazardous substances . . . from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance . . .

42 U.S.C. § 9607(a)(3).

17. The court in *Mathews v. Dow Chemical* Co., 947 F.Supp. 1517 (D.Colo.1996) discussed interpretation of arranger liability by the Eighth, Eleventh and Seventh Circuits. The court noted that the Eighth Circuit in *Aceto* "provides the most liberal interpretation of 'arranged for.' " *Id.* at 1523. *See also South Florida Water Management Dist. v. Montalvo*, 84 F.3d 402, 407, 408 n. 9 (11th Cir.1996) (case-by-case analysis, focusing on factors such as party's knowledge of disposal, ownership of the hazardous substances, and intent; refuses "wholesale adoption of *Aceto* " as law of the circuit).

resulting product. "[T]hat is, the defendant retained ownership of its pesticide throughout the formulation and packaging process." *Id.* at 1378. The complaint further alleged that the generation of wastes was inherent in the formulation process and that wastes were in fact generated and disposed of at the site. The court found that the complaint alleged sufficient facts to hold that the pesticide manufacturers had arranged for the disposal of hazardous wastes. Evidence of actual control was not necessary for arranger liability if ownership issues were otherwise established. *Id.* at 1375-1382. Furthermore, proof of specific intent to arrange for the disposal of hazardous substances is not required. *United States v. TIC Investment Corp.*, 68 F.3d 1082, 1088 (8th Cir.1995), *cert. denied*, 519 U.S. 808, 117 S.Ct. 50, 136 L.Ed.2d 14 (1996).

The Court concludes that the evidence establishes that Uniroyal owned the TCB it supplied to Vertac for processing into 2,4,5-T, that Uniroyal retained an ownership interest in its material during the processing stage, that Uniroyal owned the 2,4,5-T that was returned, that the generation of hazardous substances was inherent during the processing of Uniroyal's material, and that the processing by Vertac resulted in the release of hazardous substances. Thus Uniroyal is liable as an arranger under CERCLA. 42 U.S.C. § 9607(a)(3).

Liability Under Section 113

As noted above, the jury found that Uniroyal was not liable to Hercules for contribution under Section 113(f), while

Hercules was liable to Uniroyal for contribution.[18] Hercules asks that the Court enter judgm nt as a matter of law pursuant to Rule 50 of the Federal Rules of Civil Procedure.

In ruling on a motion for judgment as a matter of law after trial, the Court must view the evidence in the light most favorable to the prevailing party and must not engage in

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18. On the issue of Uniroyal's contribution to Hercules the jury was instructed:

> Previously in this case, this Court determined as a matter of law that Hercules is a party liable for clean-up costs at the Jacksonville site and offsite areas. Under CERCLA, any liable party or any party which has paid response costs may seek contribution from any other party who is liable or potentially liable under CERCLA. Hercules has brought such a contribution claim against Uniroyal in this case.
>
> To establish a valid claim for contribution under CERCLA § 113, you must first find that Uniroyal is liable to the United states government or the state of Arkansas as an arranger for the disposal of hazardous substances as you were instructed earlier. In addition to the elements of arranger liability, Hercules must also establish the following elements by a preponderance of the evidence:
>
> (1) that Uniroyal's actions caused contamination at the Jacksonville site and offsite areas; and
>
> (2) that Hercules incurred response costs as a result of the contamination caused by Uniroyal.
>
> If Hercules fails to prove either of the above elements by a preponderance of the evidence, then you must find that Uniroyal is not liable to Hercules under this claim.

weighing or evaluating the evidence or considering questions of credibility. Judgment as a matter of law "is appropriate only when all the evidence points one way and is 'susceptible of no reasonable inference sustaining the position of the nonmoving party.' " *Commercial Property Investments. Inc. v. Quality Inns Int.'l. Inc.*, 61 F.3d 639, 644 (8th Cir.1995) (citation omitted).

Uniroyal argues that the jury finding can stand, as contribution requires a finding of causation of contamination. *Farmland Industries. Inc. v. Morrison-Quirk Grain Corp.*, 987 F.2d 1335, 1342 n. 6 (8th Cir.1993). *See also Control Data*, 53 F.3d at 935 (focus during contribution on harm each party causes the environment; liable party responsible for its share of all response costs not just those "caused" by its release); *Elf Atochem North America, Inc. v. United States*, 833 F.Supp. 488, 494 (E.D.Pa.1993) (Eighth Circuit in *Farmland* found that proper focus is causation of contaminants at site, not the causation of response costs).

As found above, Uniroyal is liable as an arranger under Section 107(a)(3) of CERCLA. The jury verdict as to contribution would only have merit if Uniroyal's hazardous substances caused a release or threat of release without causing contamination. The evidence, however, is conclusive that during the processing of the TCB on behalf of Uniroyal to make the 2,4,5-T, hazardous substances, including dioxin, were generated, and that these were disposed of at the Site and Off-Site Areas. Furthermore, Uniroyal's hazardous substances did, indeed, cause contamination at the Site. The Court must, therefore, find that there is insufficient evidence to sustain the jury's verdict regarding Uniroyal's liability for

contribution and that Hercules is entitled to judgment as a matter of law on its claim for contribution against Uniroyal. Thus, Uniroyal is liable for its share, as determined by Section 113(f), of all response costs. *Control Data*, 53 F.3d at 936.

While asserting that the jury verdict finding Uniroyal not liable for contribution cannot be sustained, Hercules then argues that there is no evidence to support the jury's verdict finding it liable for contribution.[19] The argument, of course,

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19. The jury instruction concerning Uniroyal's Section 113 claim against Hercules reads as follows:

> Previously in this case, this Court determined as a matter of law that Hercules was jointly and severally liable for clean-up costs at the Jacksonville site and offsite areas.
>
> Under CERCLA, any liable party or any party which has paid response costs may seek contribution from any other party who is liable or potentially liable under CERCLA. If you first find Uniroyal liable under CERCLA, Uniroyal then makes such a contribution claim against Hercules in this case, for response costs Uniroyal will be required to pay in the future.
>
> Because this Court has already determined as a matter of law that Hercules is jointly and severally liable for response costs at the Jacksonville site and off-site areas, Uniroyal must establish only one additional element to prove a valid claim for contribution under CERCLA § 113. Uniroyal must establish the following element by a preponderance of the evidence:
>
> that Hercules' actions caused contamination at the Jacksonville site and offsite areas.
>
> If Uniroyal fails to prove this element by a preponderance of the evidence, then you must find that Hercules is not liable to Uniroyal under this claim.

is without merit. The Court has already found Hercules jointly and severally liable under Section 107.[20] There is no doubt that Hercules caused contamination at the Site during its years of operation there. Thus, judgment will be entered in favor of Uniroyal on its Section 113 claim against Hercules.

Divisibility of Harm

As stated above, divisibility of harm is a defense to joint and several liability. Thus, a defendant will not be held jointly and severally liable to a governmental or non-liable private plaintiff "where the defendant can demonstrate that the harm at a given site is 'divisible,' i.e., there are distinct harms or a reasonable basis for determining the contribution of each cause to a single harm." *Redwing Carriers, Inc. v. Saraland Apts.*, 94 F.3d 1489, 1513 (11th Cir.1996).

In response to a special interrogatory the jury found that Uniroyal had established "that its harm to the environment is reasonable distinguishable from the harm for which others are also liable."[21] As discussed above, the jury finding on this issue is advisory and therefore the Court is not bound by the jury's determination.

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20. Indeed, Hercules argues in its proposed conclusions that a finding of liability under Section 107(a) is the only prerequisite to liability for contribution under CERCLA Section 113(f), and therefore Uniroyal is liable to Hercules. Hercules' argument with respect to Uniroyal contradicts its assertion that the jury's verdict finding Hercules liable for contribution cannot be sustained.

21. With respect to divisibility of harm, the jury was instructed:

> If following these instructions, you find that Uniroyal arranged for disposal of hazardous substances at Vertac,

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The burden is on Uniroyal to demonstrate that there is a reasonable basis for determining the contribution of each cause to a single harm. *United States v. Colorado & Eastern*

(Cont'd)

> even though others also contributed to the release of hazardous substances, you must find that Uniroyal is liable to the United States and the State of Arkansas for the entire amount of the United States' and the State of Arkansas' costs. This liability is what the law calls joint and several liability. It means that a plaintiff can recover the entire damages from any individual defendant, though it cannot, of course, recover that amount more than once.
>
> This joint and several liability applies even if the defendants acted at different times, or even when other parties, not now before the Court, contributed also.
>
> The law also recognizes a defense to joint and several liability-divisibility of harm. When two or more parties are liable under CERCLA for harm to the environment, and one of those parties claims that it should be liable only for the harm to the environment that is attributable to it, then the burden of showing how the harm of that one party can be distinguished from the harm of the others is upon the party seeking to so limit its liability.
>
> Accordingly, if you find that Uniroyal is liable under the other instructions given to you, then Uniroyal will have the burden of proving to you that the harm to the environment for which it is liable is reasonably distinguishable from the harm for which others are also liable.
>
> If Uniroyal does not prove this distinction to your satisfaction, then Uniroyal would be jointly and severally liable with others who might also be liable for the environmental harm at the sites in issue in this action.

R. Co., 50 F.3d 1530, 1535 (10th Cir.1995). The burden on Uniroyal is substantial and the analysis is "factually complex." *United States v. Alcan Aluminum Corp.*, 964 F.2d 252, 269 (3rd Cir.1992) ("*Alcan-Butler*") *See Control Data*, 53 F.3d at 934 n. 4 ("Once liability is proved, all of the defendants are jointly and severally liable, unless *a particular defendant can establish that his harm is divisible, very difficult proposition.*") (emphasis added).

Uniroyal relies on production capacity at the Site during its years of operation or the number of barrels of waste existing at the Site prior to incineration as bases for determining divisibility. While Uniroyal attempted to provide evidence that the hazardous substances generated from Vertac's production of 2,4,5-T for Uniroyal were only a small amount of the total hazardous substances disposed of at the Site and Off-Site areas, those hazardous substances are indistinguishable, and commingled with, other hazardous substances at the Site.[22] Indeed, Uniroyal argued in its defense that its raw material and finished product were commingled with other raw material and finished product at the Vertac Site, so that it could not have retained any ownership interest. However, if these products were commingled, by Uniroyal's own admissions, then it would follow that some of the hazardous substances generated from the production of that material were also commingled.

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22. The volume or quantity of wastes produced during production of Uniroyal's 2,4,5-T may be relevant in allocating response costs under Section 113(f). *See Redwing Carriers*, 94 F.3d at 1514 n. 32.

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Uniroyal's reliance on volumetric evidence is insufficient in this instance to meet its burden. Where, as in this case, hazardous substances are commingled, a defendant cannot rely on merely volumetric evidence. Evidence must be produced "disclosing the individual and interactive qualities of the substances deposited" at the Site. *United States v. Monsanto Co.*, 858 F.2d 160, 172 (4th Cir.1988), *cert. denied*, 490 U.S. 1106, 109 S.Ct. 3156, 104 L.Ed.2d 1019 (1989). This includes proof of the "relative toxicity, migratory potential and synergistic capacity" of the various substances present. *Id.* at 172 n. 26. *See also Alcan-Butler*, 964 F.2d at 269 (analysis of divisibility of harm factually complex "as it will require an assessment of the relative toxicity, migratory potential and synergistic capacity of the hazardous waste at issue.") *But see Matter of Bell Petroleum Services. Inc.*, 3 F.3d 889, 903-904 (5th Cir.1993) (defendant met burden of proving reasonable basis for apportioning liability on volumetric basis where only one hazardous substance, and no synergistic effects),

Uniroyal did not call any expert witnesses to discuss the relative toxicity, migratory potential or synergistic effects of the commingled hazardous substances at the Site. It disregards hazardous substances, beside dioxin, that were produced during the manufacture of Uniroyal's 2,4,5-T. Uniroyal's reliance on the number of drums as a basis for divisibility ignores evidence of leakage, cross-contamination and commingling. There is no evidence "showing a relationship between waste volume, the release of hazardous substances and the harm at the site." *Monsanto*, 858 F.2d at 172.

In sum, Uniroyal has failed to present sufficient evidence to allow the Court to apportion the harm. Finding that Uniroyal has failed to prove divisibility of harm, the Court finds that Uniroyal's liability is joint and several.

Hercules' Claims against SCD

The second segment of the liability trial involved the third party claim by Hercules against SCD.[23] Hercules' claim arises from SCD's sale of mixed TCBs, also known as trichlorobenzene still bottoms or polychlors, to Transvaal, Inc., Vertac's predecessor in interest (hereinafter referred to as "Vertac"). Hercules contends that SCD's sale of these polychlors to Vertac constituted an arrangement for disposal or treatment of a hazardous substance and SCD is a liable party under § 107(a)(3) of CERCLA, which imposes arranger liability. Hercules seeks contribution under Section 113 for SCD's share of Hercules' liability to the United States under previous orders of the Court.

A detailed analysis of the transaction is necessary to determine whether it was in fact a sale or an arrangement for disposal of a hazardous substance. *See United States v. Petersen Sand and Gravel, Inc.*, 806 F.Supp. 1346, 1354 (N.D.Ill.1992) (No bright line between a sale and a disposal under CERCLA; party's responsibility under Section 107(a)(3) must turn on fact-specific inquiry into nature of transaction). Because of the nature of the transaction, some discussion of the chemical reactions involved is necessary.

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23. As discussed above, Hercules' Section 107 claim against SCD is dismissed.

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From around November 1971 through April 1979, Vertac manufactured 2,4,5-T at the Jacksonville plant. 1,2,4,5-tetrachlorobenzene ("1,2,4,5-TCB") was an essential raw material for Vertac's manufacture of 2,4,5-T. Until the end of 1973, Vertac purchased 1,2,4,5-TCB primarily from Hooker Chemical.

In 1973, Vertac learned that Hooker planned to discontinue sales of 1,2,4,5-TCB at the end of the year. Vertac then began looking for alternate supplies of 1,2,4,5-TCB so that it could continue manufacturing 2,4,5-T.

SCD is a manufacturer of a range of chemical intermediates known as chlorinated benzenes, made by reacting chlorine gas and benzene together. During this reaction, isomers and chlorinated benzene compounds are created, including monochlorobenzene ("MCB"), dichlorobenzene, trichlorobenzene ("tri"), and tetrachlorobenzene ("TCB"). In the production of chlorobenzenes, it is impossible to produce a particular chlorinated benzene compound or isomer to the exclusion of others.

During the production process, chlorine and benzene were reacted together, and the chlorinated mass was then moved to a series of distillation columns. In the first distillation column, the first product separated out was MCB, and it was placed into a storage tank pending shipment to SCD's customers.

The remaining material, consisting of paradichlorobenzene ("PDCB"), orthodichlorobenzene ("ODCB"), and Tris moved from the bottom of the MCB distillation column into a series

of two columns. PDCB was removed from the top of the first of the two columns. It was placed into a different storage tank pending shipment to SCD's customers. ODCB was distilled off the top of the second column, and placed in a third storage tank.

The remaining materials were a mixture of Tris referred to as "crude trichlorobenzene." These materials were shipped to SCD's plant in New Jersey for further processing.

In what SCD asserts is "product balance," SCD states that it was essential to its economic success to sell each of the chlorinated benzene compounds or isomers that was produced during the chemical reactions. It therefore began to search for new markets for each of its products, looking particularly to major chemical companies.

In 1972, Dupont approached SCD to supply a large requirement of ODCB for Dupont's use in the manufacture of herbicides. SCD, however, could not make ODCB exclusively. For each pound of ODCB, SCD also made 1 1/2 to 2 pounds of PDCB and three pounds of MCB. SCD agreed to produce the ODCB for Dupont and actively sought out new customers for the surplus PDCB that was produced in conjunction with the ODCB.

In 1972, SCD became aware that Velsicol Chemical Company ("Velsicol") needed 1,2,4 tri for use in the manufacture of herbicides. SCD entered into a contract with Velsicol for the sale of 1,2,4 tri. At the same time, SCD developed a process to make the 1,2,4 tri by chlorinating the PDCB, and it was therefore able to use the excess PDCB as a raw material in the production of 1,2,4 tri for Velsicol.

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The contract between Velsicol and SCD covered the period from January 1, 1973 through December 31, 1978. The contract, containing a technical specification for 99% pure 1,2,4 tri, was a requirements contact whereby, SCD would supply 75 percent of Velsicol's requirement up to a maximum of 30 million pounds of 1,2,4 tri per year. The base price of the 1,2,4 tri was set at 11.5 cents per pound, but the agreement included a volume discount whereby the price of the materials decreased if Velsicol met certain quantity requirements under the contract. The agreement also provided a formula for SCD to adjust the price of the materials sold to Velsicol if there were changes in the price of SCD's raw materials or changes in the Consumer Price Index ("CPI").

It is impossible to produce 1,2,4 tri exclusively. In manufacturing this material for Velsicol, SCD would also be producing mixed TCBs.[24] In pricing the 1,2,4 tri to Velsicol, SCD assumed that it would be able to sell the TCB produced in conjunction with the 1,2,4 tri at a price that would at least cover its raw material and energy costs.

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24. In 1972, SCD constructed a plant to produce 1,2,4 tri. Ninety-eight percent pure PDCB was reacted with chlorine and fed into a distillation column, where the unreacted PDCB was taken from the top of the column and fed back into the reactor. The bottom of the column contained a mixture consisting primarily of 1,2,4 tri and mixed TCBs. This mixture was fed into another distillation column, where the 1,2,4 tri was boiled off the top of the column and the mixed TCBs, consisting primarily of 1,2,3,4 TCB and 1,2,4,5 TCB were taken from the bottom of the column. The mixed TCBS are sometimes referred to as "trichlorobenzene still bottoms" or "polychlors."

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In 1973, Vertac became aware that SCD had a mixture of TCB available. In August of 1973 Vertac and SCD entered into a contract for the sale of polychlors. The terms of the contract covered a five-year period from January 1974 through December 1978. The material to be supplied would contain a maximum of 5 percent trichlorobenzene ("Tris"), 61 to 67 percent 1,2,4,5-TCB, 30 to 33 percent 1,2,3,4-TCB, 4 percent maximum pentachlorobenzene and trace amounts of hexachlorobenzene. The contract between SCD and Vertac was a requirements contract, whereby SCD would supply 90 percent of Vertac's requirements of the polychlors up to a maximum of 10 million pounds per year.

The contract provided a volume discount. If Vertac purchased more than 6 million pounds, it received a one-half cent per pound discount; if it purchased over 8 million pounds, it received a one cent per pound discount. The base price was set at 11 cents per pound; however, the contract provided a formula whereby SCD could adjust the price of the materials sold to Vertac if there were changes in the price of SCD's raw materials or changes in the CPI. The purpose of this provision was to protect SCD's profit margin in the event of significant increases in its raw material costs.

SCD determined the base price of 11 cents per pound after taking into account the raw material values, energy and labor costs, overhead and amortization of plant and equipment, and profit margin, and thereafter discussing the price with Vertac.

Vertac could not use SCD's material without processing it further to remove the 1,2,4,5-TCB it needed from the other

materials. Vertac had to build a separate facility, referred to as the "benzene plant," for separating 1,2,4,5-TCB from the polychlor material.

After the separation, Vertac was left with a residue that contained, primarily, 1,2,3,4-TCB, plus some 1,2,4,5-TCB, 1,2,4-trichlorobenzene, pentachlorobenzene, and other impurities. In Vertac's processing of the polychlors, various drips, leaks and spills occurred during the separation and handling of the 1,2,3,4-TCB residue. Spills of the 1,2,3,4-TCB residue ultimately went to the equalization basin and was discharged to the Jacksonville sewage treatment plant.

Vertac had no use for the residue. However, Vertac intended to sell the 1,2,3,4 residue. SCD advised Vertac that Olin Chemical Company ("Olin") was a potential purchaser of the residue. Vertac ultimately was able to sell virtually all of the 1,2,3,4 residue to Olin for further processing and use.

During the course of dealing between SCD and Vertac, SCD frequently invoked the price escalation clause due to frequent fluctuations in the CPI and the prices for benzene and chlorine from 1974 through 1976.

After purchasing over 6 million pounds of polychlors in the first year of the contract, Vertac notified SCD that it would need 10 million pounds of polychlors the next year, an amount in excess of SCD's ability to produce the polychlors in its normal production process. As a result, SCD and Vertac negotiated a 7.5 cent premium on the polychlors, effective January 1, 1975. The premium reflected SCD's additional production costs for chlorinating additional PDCB to produce more polychlors.

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In January, 1975, Vertac requested relief from the 30-day payment term included in its contract. SCD agreed to allow Vertac extended payment terms, where Vertac would be allowed to pay on invoices in 90 days, but only on the condition that Vertac pay the cost of financing the extended term at 1 percent per month.

In March, 1975, Vertac requested a reduction in the price of polychlors to 16 cents per pound due to a decline in business. At the time, polychlors were selling for approximately 25 cents per pound. SCD refused to agree to the price reduction because SCD would not have been able to make a profit at the lower rate.

In 1976, SCD began supplying Vertac with pure 1,2,4,5-TCB in addition to the polychlors. Like Vertac, SCD sold the 1,2,3,4 residue remaining after the separation to Olin.

Vertac stopped buying the polychlors from SCD in April of 1977. Vertac's last purchase of pure 1,2,4,5-TCB from SCD was in December, 1978. The EPA ban of 2,4,5-T in 1979 basically eliminated the commercial demand for TCB.

Inspections at the Site and Offsite reveal the presence of tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene and trichlorobenzenes at the Site and Offsite areas. The 1,2,4,5-TCB, 1,2,4-tri, hexachlorobenzene, pentachlorobenzene, and the distillation or fractionation column bottoms from the production of chlorobenzenes are all classified as hazardous substances under CERCLA. 40 C.F.R. § 302.4 (Table). The polychlors that came from SCD were the source of these hazardous substances.

Appendix E

SCD contends that it was selling a useful product. Hercules, however, argues that the "useful product" defense does not extend to the limits asserted by SCD.

The jury found that SCD was not liable to Hercules for the arrangement for treatment or disposal of hazardous substances at the Plant Site or Offsite areas.[25] Because it did not find SCD liable as an arranger, it did not address the issue of Hercules' claim for contribution.

SCD argues that the jury's finding that SCD was not liable as an arranger is binding on the Court on the question of SCD's liability to Hercules. That is, SCD correctly argues that a plaintiff

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25. With regard to Hercules' claim against SCD, the jury instruction read as follows:

> The mere sale of a product does not amount to an arrangement for disposal or treatment. For instance, where a new and useful substance is sold to another, who then incorporates it into a product or manufacturing process, there is no arrangement for disposal or treatment. On the other hand, where there is a sale of a substance merely to get rid of it or where the sale is a sham for disposal, the seller may be found liable. Thus, if you find by the preponderance of the evidence that Standard Chlorine's sales to Vertac were of a new and useful substance that Vertac incorporated into a product or manufacturing process, then you should find that Standard Chlorine did not arrange for disposal or treatment and is, therefore, not liable. If on the other hand, you find by a preponderance of the evidence that Standard Chlorine sold its polychlors also known as trichlorobenzene stillbottoms to Vertac merely to get rid of them or that these sales were really a sham for disposal, then you should find that Standard Chlorine did arrange for disposal or treatment.

cannot succeed under a Section 113(f)(1) unless it first establishes that the defendant is a liable party under Section 107. Thus, the jury's finding that SCD is not liable as an arranger under Section 107(a)(3) constitutes a resolution of SCD's Section 113 liability.[26]

SCD then argues that the jury's finding binds the Court's determination of Hercules' Section 107 claim. That argument, however, conflicts with SCD's position that the contribution claim can only be brought under Section 113 and that Hercules' Section 107 claim should be dismissed.

The issue is confusing, but can be reconciled. A finding that SCD is a liable party under Section 107 is a necessary element to a contribution claim. The Court need not, at this time, decide whether that determination should be made by the Court as a matter of law or can be left to a jury.[27] It is clear that

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26. "When legal and equitable claims are tried together, the right to a jury in the legal action encompasses issues common to both." *Lincoln v. Board of Regents of Univ. System of Georgia*, 697 F.2d 928, 934 (11th Cir.1983), *cert. denied*, 464 U.S. 826, 104 S.Ct. 97, 78 L.Ed.2d 102 (1983). "Thus, to the extent that the legal and equitable issues overlap, the jury's verdict on the legal claim operates as a finding of fact binding on the Court in its disposition of the accompanying equitable claim." *Dasler v. E.F. Hutton & Co., Inc.*, 694 F.Supp. 624, 627 (D.Minn.1988). *See also McIntosh v. Weinberger*, 810 F.2d 1411, 1429 (8th Cir.1987), *vacated on other grounds sub nom. Turner v. McIntosh*, 487 U.S. 1212, 108 S.Ct. 2861, 101 L.Ed.2d 898 (1988); *Gibson v. Mohawk Rubber Co.*, 695 F.2d 1093, 1101 (8th Cir.1982).

27. Given that the parties consented to a jury trial on the contribution claim, and that liability as an arranger is a necessary element of that claim, the Court is of the opinion that the jury finding is binding. *See Control Data*, 53 F.3d at 934 (recovery of response costs requires a plaintiff to initially prove that a defendant is liable under CERCLA).

whether the Court views the jury finding as binding or merely advisory the evidence supports the conclusion that SCD is not liable.

"The sale of a useful, although hazardous substance, to serve a particular purpose, is not an arrangement for disposal and will not impose CERCLA liability." *Douglas County. Neb. v. Gould, Inc.*, 871 F.Supp. 1242, 1245 (D.Neb.1994). "If a party merely sells a product, without additional evidence that the transaction includes an 'arrangement' for the ultimate disposal of a hazardous substance, CERCLA liability would not be imposed." *Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1317 (11th Cir.1990).

However, merely characterizing a transaction as a sale does not preclude a finding of liability. If the transaction is really a sham for disposal, CERCLA liability will attach. *Douglas County*, 871 F.Supp. at 1245. The essential inquiry, therefore, is whether SCD, by selling the polychlors to Vertac, arranged to "get rid of" hazardous substances.[28]

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28. SCD, relying on a recent Sixth Circuit case, states that the plaintiff must prove that a defendant entered the transaction with the intent of arranging for the disposal or treatment of a hazardous substance. *United States v. Cello-Foil Products, Inc.*, 100 F.3d 1227, 1231 (6th Cir.1996) ("We conclude that the requisite inquiry is whether the party intended to enter into a transaction that included an 'arrangement for' the disposal of hazardous substances. The intent need not be proven by direct evidence, but can be inferred from the totality of the circumstances.") *See Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746, 751 (7th Cir.1993), *cert. denied*, 510 U.S. 1044, 114 S.Ct. 691, 126 L.Ed.2d 658 (1994) ("arranged for" implies intentional action); *See also Ekotek Site PRP Committee v. Self*, 932

(Cont'd)

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Hercules argues that the polychlors were not a primary business product. The still bottom mixture, according to Hercules, was nothing more than a "by-product" of SCD's production process. It further contends that the by-product material was not useful in its existing state; rather Vertac had to refine the material further to obtain the product it needed. In addition, Hercules argues that there was no effective market for the material; that SCD could not sell it to anyone other than Vertac.

The record establishes that the transaction involved the sale of a useful product. SCD sold Vertac a legitimate, technical grade chemical product for use as a raw material in Vertac's manufacturing operations. That the product

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(Cont'd)
F.Supp. 1328, 1336 (D.Utah 1996) (concludes that Tenth Circuit would follow approach of Seventh and Eleventh Circuits and require intentional action before arranger liability attaches)

The Eleventh Circuit, however, rejected any attempt to substitute a *per se* rule for the phrase "arranged for." Rather, intent is a relevant, but not necessarily dispositive factor, in the determination of whether there has been an "arrangement" for disposal. *Montalvo*, 84 F.3d at 407. *See also Redwing Carriers*, 94 F.3d at 1512 (plaintiff need not demonstrate a party acted with specific intent to dispose of hazardous substances).

The Eighth Circuit has rejected the argument that Section 107(a)(3) contains a specific intent requirement. *TIC Investment*, 68 F.3d at 1087-88. Thus, it is unlikely that the Eighth Circuit would require Hercules to prove that SCD intended to dispose of the waste in order to establish arranger liability. Nevertheless, assuming an intent requirement, it is clear from the totality of the circumstances surrounding the transaction that SCD did not intend to dispose of a hazardous substance.

required further processing before it could be put to its intended use is a common occurrence in the chemical industry. Indeed, a technical grade product is one that requires some further processing before it can be put to its intended use.

It was typical of the chlorinated benzene market for a company to have a few customers for a particular product. Thus, Vertac was SCD's only customer for the polychlors. Similarly, Velsicol was SCD's only customer for the 1,2,4 tri. SCD had two or three customers for the ODCB, and seven or eight customers for MCB.

SCD's sale to Vertac was conducted at a substantial profit for SCD, and the contract for sale of polychlors contained terms similar to those contained in sales contracts SCD had for other products.

"[T]he sale of a product which contains a hazardous substance cannot be equated to the disposal of the substance itself or even the making of arrangements for its subsequent disposal . . ." *G.J. Leasing Co., Inc. v. Union Elec. Co.*, 54 F.3d 379, 384 (7th Cir.1995) (citations omitted). The Court is not persuaded that SCD was attempting to get rid of a by-product for which it had no use. Thus, the transaction between Vertac and SCD is distinguishable from those in the cases relied upon by Hercules. *See e.g., Catellus Dev. Corp. v. United States*, 34 F.3d 748 (9th Cir.1994) (sale of spent lead acid batteries to a reclaimer who removed the lead plates prior to discarding the battery casing constituted arrangement for disposal); *State of California v. Summer Del Caribe*, 821 F.Supp. 574 (N.D.Cal.1993) (sale of solder dross, a by-

product from the manufacture of cans, from which solder could be reclaimed after additional processing, constituted an arrangement for disposal). Furthermore, unlike the contaminated styrene in *Cadillac Fairview/California. Inc. v. United States*, 41 F.3d 562 (9th Cir.1994) or the used motor oil in *Ekotek PRP Committee v. Self*, 881 F.Supp. 1516 (D.Utah 1995), the polychlors sold by SCD were not waste produced as a result of prior uses of the materials for their intended purpose and they had substantial economic value in the state in which they were sold.

The evidence establishes that SCD's manufacturing process produced a number of chemically-distinct chlorinated benzenes, each of which was fit for particular industrial uses. SCD attempted to sell every chlorinated benzene it produced at profit margins sufficient to render profitable the entire manufacturing operation.

The Court will not extend CERCLA liability to SCD which sold a hazardous, but useful product to Vertac for its original use as raw material in Vertac's manufacturing operation of 2,4,5-T. *See Gould*, 871 F.Supp. at 1247 (CERCLA liability will not attach if a transaction involves the sale of a new useful product as opposed to the sale of a substance merely to get rid of it.)

Thus, the Court finds that SCD is not liable as an arranger and therefore Hercules' Section 113(f) claim for contribution against SCD must be dismissed.

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SUMMARY

In sum, the Court finds that Uniroyal is liable as an arranger under Section 107(a)(3). Thus, judgment will be entered finding Uniroyal jointly and severally liable to the United States and the ADPC & E under Section 107(a)(3) of CERCLA and liable in contribution to Hercules under Section 113(f) of CERCLA, and Hercules liable in contribution to Uniroyal under Section 113(f) of CERCLA. Hercules' claims against SCD are dismissed with prejudice.

The Court notes that allocation of response costs according to equitable principles remains. The parties are directed to file reports within twenty days setting forth proposed case management plans for the allocation phase.

IT IS SO ORDERED.

APPENDIX F — ORDER OF THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT DENYING PETITION FOR REHEARING FILED SEPTEMBER 19, 2006

UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

No. 05-3147/3153

United States of America,

Appellee,

vs.

Hercules, Inc.; Crompton Co., et al.

Appellants.

Order Denying Petition for Rehearing and for Rehearing En Banc

The petitions for rehearing en banc are denied. The petitions for rehearing by the panel are also denied.

Chief Judge Loken did not participate in the consideration or decision of this matter.

(5128-010199)

September 19, 2006

Order Entered at the Direction of the Court:

Clerk, U.S. Court of Appeals, Eighth Circuit